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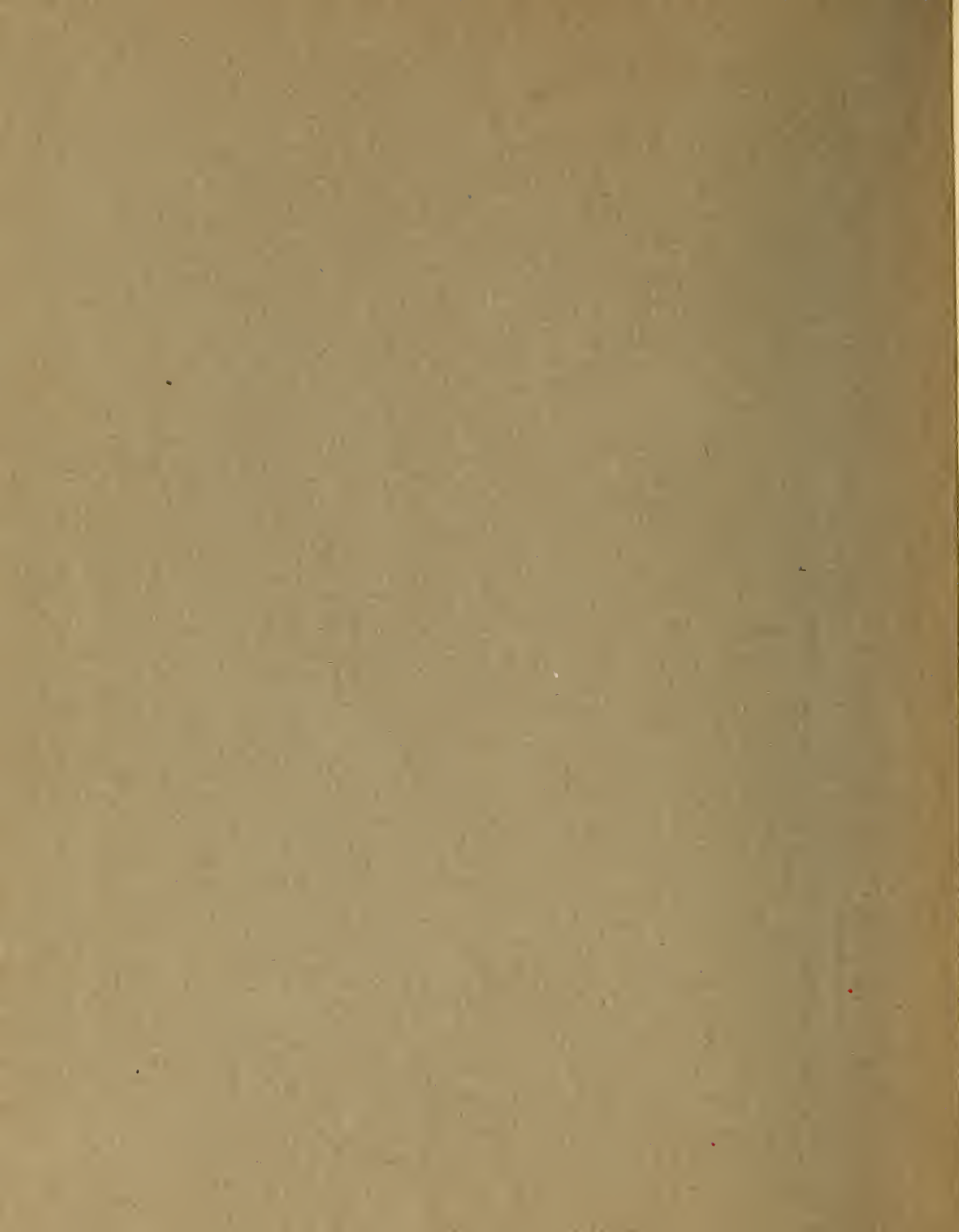
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RM 211
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NORMAL WEIGHT
CORRECT
EATING

LOUGHNEY



NORMAL WEIGHT
CORRECT EATING

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DR. A. M. LOUGHNEY
Seattle, Wash.



DR. A. M. LOUGHNEY

NORMAL WEIGHT CORRECT EATING

A Practical, Common-sense Method of Restoring Normal
Weight in the Excessively Fat and the Abnormally
Lean—The Building of Better Men and Women
Through Health Culture—Together With an
Exhaustive Treatise on Foods and Their
Nutritive Values in Preventing and
Overcoming the Diseased Condi-
tions That Humankind Is
Heir To.

Published by
DR. A. M. LOUGHNEY
Seattle, Wash.

RM 217
L6

DEDICATION

Dedicated to the Cause of Normal Health for All. May This Little Book Enable Those Who Have Lost Their Health to Regain It—Those Who Now Possess It to Retain It. I Am Confident It Will Accomplish This for All Who Are Guided By Its Teachings. My Efforts Shall Then Be Amply Rewarded.

FEB -9 1920

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Foreword

IN offering to the public my method for scientifically removing obesity by combined mechanical and dietary means, I do so with a firm conviction that the most satisfactory results may be obtained by it within a reasonable length of time, where it is carried out faithfully, according to directions. And it will be found devoid of the undesirable features of so many of the fat reduction methods now on the market. 106

It should be borne in mind that by "dietary means" I do not refer to fasting, or even restricting the quantity of food taken to a point that will work a hardship on the patient. Instead, my system provides for a liberal allowance of food at all times, so proportioned, however, as to supply in a well balanced manner those chemical elements needed by the obese person, while diminishing or wholly eliminating those not needed.

The common-sense, safe method for fat removal is one which works in accord with nature—that removes fat in a natural manner. Such a method is the one I offer. Having used it in my own case with most gratifying and speedy results, as illustrated in this book, and having seen its universally successful results in many other cases, I have no hesitancy in offering it as the simplest, most practical and efficient method yet devised for removing superfluous fatty tissue without danger or discomfort, and without the possibility of unpleasant after-effects.

In my years of experience in treating obese conditions I have found that obesity is in practically all instances complicated by other abnormal conditions of the body. I have about come to the conclusion that it is impossible for an excessively fat man or woman to be healthy in every other respect. And this is not to be wondered at when you consider that obesity is always an abnormal (diseased) condition; and diseased conditions are prone to ally themselves one with another.

In order to make my book as comprehensive and far-reaching as possible I have included a general treatise on curative eating as a means of overcoming the ills which human flesh is heir to; as well as sections devoted to "Health Culture," and other important subjects. The information imparted is not represented as the author's personal work entirely, but includes a consensus of opinion of some of the world's most noted authorities on the subjects covered.

In the section devoted to Health Culture will be found a set of simple, boiled-down, yet most practical and efficacious exercises—all that need be followed by anyone—for developing muscular strength and building healthy tissue in various parts of the body. These are not mere "theories," but constitute a carefully worked out course of exercises, the successful nature of which has been proven beyond doubt.

Having transformed myself from a veritable weakling in bodily stature to a condition of intense muscular strength and development by this course of exercise, and having further noted the invariable success experienced by countless others with it, I am in a position to state intelligently that the most gratifying results may be expected from its faithful application.

This volume will, therefore, prove of untold value, not only to the obese person, regardless of what the complicating conditions may be, but also to every other sufferer and undeveloped person. Since incorrect eating habits are the cause of a great majority of the ills of humankind it is but reasonable to presume that proper eating habits will remove them. And it is the author's firm conviction that in this volume will be found all that is necessary to be known in order to enable one to intelligently and successfully apply the principles of correct living and eating in overcoming almost any abnormal or undeveloped condition.

Cause and Effect

ONE of the simple and easily understood laws of nature is that of cause and effect. Its workings may be observed by us at all times and in all things. It is as unalterable as time itself, and because of the easily understood nature of it, I shall make use of the principle, in this connection, to illustrate the point I wish to make.

We know that a given cause will produce a given effect. For instance, a growing plant kept under shade will be stunted in its growth. A certain amount of sunlight is necessary to its full development. By taking this away we are contributing a cause, which can only result in a certain effect—stunted growth.

We know that sulphur, saltpeter and charcoal—each in itself non-explosive—will, when combined in certain proportions, produce gunpowder. Now gunpowder is harmless, until combined with the element fire, when it becomes instantly transformed into highly explosive gases; and if confined to a small area, a destructive explosion results. In this instance the combining of the three original substances represents a cause which brings about a chemical change in the completed mixture. Adding the element fire to the mixture is another cause, the effect of which is the resulting explosion.

Chemistry has revealed to us that rank poisons are produced by combining two or more certain substances, although each, in itself, is non-poisonous. How few persons seem to realize the important part this same law plays in our everyday life. The analogies of the stunted plant, the manufactured poison and the explosion of the gunpowder are found in the manner of living and eating of the great majority of people. By ignoring the unalterable working of this law in our eating and drinking

habits we produce toxins (poisons) within our body which cannot but cause a disastrous effect on our health.

Eating this, that and the other thing—anything that fancy may dictate—will cause serious internal disruptions; unwise and inharmonious combinations of food will set up chemical changes in the stomach and intestines, which, if persisted in, will undermine the most robust constitution. It is these unwise selections and inharmonious combinations of foods that are responsible for most of the ills of mankind. Yet, strange as it may seem, it is one of the vital principles of life that is most generally disregarded and shamefully violated every day.

Health is a natural (normal) condition, the perpetuity of which depends almost entirely upon the proper nourishing of the body. Continuously perfect nutrition would render disease almost an unknown evil in the world. From this it will be apparent that wrong eating and drinking habits are responsible for the majority of human ills, or abnormal conditions of health. And since perfect nutrition of the body is dependent on the proper selection, combination and proportioning of the foods we eat and the fluids we drink, it will readily be understood what an important part the subject of correct eating plays in our everyday life.

Were it possible for all of us, at all times, to maintain a scientifically balanced diet there would be no such abnormal conditions encountered as obesity, emaciation, constipation, rheumatism, Bright's disease, tuberculosis, etc. And it follows that, since wrong nutrition was responsible for developing the abnormal condition, we can, by restoring proper nutrition, barring organic complications, again bring the body back to its normal, healthy condition. It is merely a simple application of the law of cause and effect.

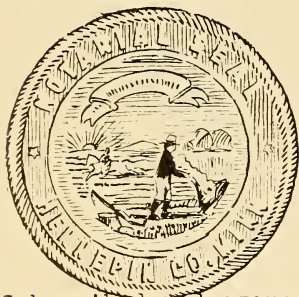


DR. LOUGHNEY BEFORE REDUCING

(See Page 35)

STATE OF MINNESOTA,)
(SS
COUNTY OF HENNEPIN,)

We, the undersigned citizens and professional men of Minneapolis, Minnesota, hereby certify on oath, that on the 29th day of June 1916 we, and each of us took the accurate and correct waist measure of Doctor A. M. Loughney of said City of Minneapolis, and that on said day the Doctor's waist measurement was 42 1/2 inches; that thereafter on the 31st day of July - 1916, we, and each of us again took the correct and accurate waist measurement again at the same point and found that the Doctor's waist measurement had been decreased 10 inches, his waist measure at the date of said last measurement being only 32 1/2 inches.



J. L. Montgomery M.D.
Safford L. Jayne
J. L. M. Lee
Harry J. Bonnelly

Subscribed and sworn to before me this 31st day of July A. D. 1916.

M. G. Simmonek
Notary Public, Hennepin County, Minn.
My commission expires Nov. 1-1917.

SWORN AFFIDAVIT OF DR. LOUGHNEY'S REDUCTION

Obesity a Disease

OBESITY is a disease, wherein the victim is possessed of an overabundance of fatty tissue, producing abnormal weight which is not only a burden to bear but becomes a really serious menace to health.

In many families obesity is, to a certain degree, hereditary. There is an inherited tendency that makes the person especially susceptible to it, and far greater diligence is required by this person in order to ward it off than would be necessary by one in whom the tendency is not present. However, the condition may be surely conquered by the careful observance of the simple rules which I shall give.

Starvation methods for removing obesity are not only unsuccessful but are positively harmful in some cases, and wholly unnecessary. What they accomplish in weight reduction is at the expense of health in many instances. True, weight may be reduced by entirely withholding food for a given time. But when the old manner of eating is resumed the obese condition will return.

Everyone will agree that the more logical way is to instruct the patient on the start with the necessity of scientifically proportioning and balancing his foods in a way that will be calculated to not only overcome obesity, but as well prevent it. Then by the time his reduction to normal weight is accomplished he will have learned how to eat in a manner that will prevent a recurrence of the abnormal condition, and that will also prove far more enjoyable. Supplement this with my easy-to-use mechanical means for aiding nature in the removal of the fatty tissue, and you have the ideal method—one that will prove speedy and efficacious.

To attempt to drug out obesity is harmful, because of the deleterious effects on digestion and various other functions of the body and consequent injury to organs and tissues. Boiling out fat, starving it out and reducing it by heavy exercise are objectionable methods. They are weakening and often have an injurious effect on the heart. They accom-

plish their purpose—if it is accomplished—at the expense of the patient's personal appearance, leaving the skin wrinkled and flabby, as of a small man in a large man's skin, and produce an emaciated look.

Among the most direct contributing causes of obesity are overeating of foods, and especially foods of a starchy nature; injudicious use of stimulants, and the failure to take sufficient bodily exercise. When the quantity of food taken is too great to be properly assimilated by the body, the surplus goes toward the accumulation of fatty tissue. If the excess of food is persisted in the fatty accumulation continues until the victim becomes a positive burden to himself.

The most pronounced fat making foods in common use are bread, butter, cream, cereal products, potatoes, sugar, syrup, bananas, fat meat, figs, confections and all pies, desserts, sweetened beverages, etc., containing sugar. Since the primary function of fats is to produce heat, it follows that the fat person may take a moderate quantity of fat each day during cold weather. In most cases this will be utilized in heat making and will not be stored in the tissues. The quantity of fats taken must necessarily be quite limited, however, since the accumulation of fat in the majority of obese bodies will supply the necessary heat, without the assistance of fat from foods. In warm weather no fats should be taken.

Butter, cream, olive oil, meats, nuts, etc., together with starches and sugars, are among the most important heat making foods, so it is important that we regulate the quantities taken of these articles of diet, particularly during the summer.

In the reduction of obesity it is desirable that normal bowel action be maintained. The use of Dr. Loughney's Mechanical Fat Remover over the stomach and abdomen will have a very marked beneficial effect in this direction. Its work should be assisted by free use of wheat bran; say two tablespoonfuls taken with the meals, especially morning and evening. This may be taken uncooked, in cold water, or it may be cooked as a porridge and eaten with milk or thin cream. In summer, when berries and fruits are in season, they may be substituted for the bran, if desired.

Obesity is so often found associated with abnormal blood pressure, kidney ailments, catarrh, etc., that it would seem they are, in most instances, a necessary complication. A method of treatment which will remove the obese condition will, in nearly all cases, relieve the other complicating ailments by removing their cause.

The obesity caused by alcoholic drink is by far the worst form of this disease. The victim is handicapped not only by the excess weight, but also by a bodily weakness and a lack of muscular strength and control, which render him even more helpless against the abnormal burden than his brother victim of the overeating form. This fact is readily discernible in the more labored and unsteady gait of the person made fat through the use of intoxicants, than that of the one made fat through overeating.

In all forms of obesity of the more pronounced types there is dangerous pressure exerted upon the vital organs—lungs, heart, etc. The obese body, therefore, becomes a much easier prey to the ravages of pneumonia, influenza and the like, as well as every contagious and infectious disease, from the fact that it is in a far less favorable condition to defend itself than the normal body.

A person with a hearty appetite and good digestion is looked upon as one particularly blessed by nature. Yet this blessing may easily lead to one's undoing, by overeating. It is usually the person with the so-called "good stomach" who suffers himself to eat more than he can digest and assimilate. Thus each meal adds its quota to his ever increasing burden of excess fat.

A most excellent diet for the fat person is fresh, uncooked fruit for the morning and evening meals, with no other food. The noon meal may consist of lean meat and cooked non-starchy vegetables. No fruit should be taken with this meal. A raw vegetable salad should be included. After two or three weeks, the meat meal may be dropped every second day and baked potatoes and other starchy foods, with non-starchy vegetables and salad substituted. After three or four weeks one of the two fruit meals may be dropped and a starchy meal substituted.

This is to be continued, unless the weight begins to increase, in which case the two fruit meals should be resumed.

It is important that the obese person bathe frequently. A cold or tepid bath at least every second morning is advisable. This should be followed by a brisk dry towel rub, to set up good capillary circulation and a healthy condition of the skin. In case the bowels are constipated, onions or spinach should be included with the cooked, non-starchy vegetables.

During this treatment the patient must be persistent in the daily use of my Mechanical Fat Remover. This is preferably used while in a reclining position. A few minutes' use both morning and evening is necessary, and if one's occupation will permit, it should also be applied occasionally during the day for a few moments at a time. After the patient has been restored to normal weight, regular eating may be resumed, care being taken, however, to exclude from the menus sugar, butter, cream, candies, cakes, pastries, sweetened beverages, etc.

WE EAT TOO MUCH

Regarding the over-consumption of foods, I quote from Hirschfield, as follows:

“Every year we spend in the United States over six hundred and seventy-two millions of dollars for food that is not required by the body and at least forty-five millions to get rid of it again. This does not consider the outlay to doctors and undertakers, nor the loss of time. It should be understood at once that the body can make use of only a certain quantity of food. Any surplus has to go through the process of digestion, assimilation and excretion, all of which uses up a tremendous amount of energy and produces nothing more than a large bowel movement and richer urine.

“Another proof of the common mistakes in diet is the difficulty many people have in retaining a decent figure. They would dismiss any caretaker who should permit horses and cows to grow a belly such as they carry around themselves. . . . Only the quantity of the com-

ponent parts of our meals must be rearranged to agree with the demands of the body. It is not necessary to give up the delicacies of the table.

“All that we require in food is that it shall produce for our body, with the least wear of its organs, heat, strength and energy, in order that we may do our best work; that it shall leave enough material for the repair of worn-out tissue; that it shall provide in youth a sufficiency for growth and at all times enough reserve for the body to get along without eating for a couple of weeks, in case of an emergency, in sickness or accident.

“Two or three pounds of cereals, vegetables, fruit, bread and one to two and a half ounces of fat, constitute an amount of food well tolerated by any person who leads an ordinarily hygienic life. This quantity will over-feed and fatten only those who eat much meat besides or who do not exercise.

“Carbohydrates represent for the body the coal which produces heat and power. The proteids (albumen) which we eat in a concentrated form in meat, eggs and cheese and in small quantities in all cereals, are the material from which the greatest part of the body is built and are just as unfit to give strength as iron, from which a boiler is built, is unfit as its firing material. But for many years the conclusion was that because our muscles are flesh (proteids) the eating of meat (which is composed mainly of proteids) must produce strength.

“The quantity of albumen needed by the system is quickly absorbed from the intestines. The remainder is more slowly absorbed, and having time to putrefy, makes an ill-smelling sewer of the digestive tract. Then from the bowels putrid matter is taken into the blood, which becomes unhealthy, and a fine soil for vicious bacteria. Bile is the intestinal disinfectant, but the liver is prepared to deliver quantities sufficient only for six or seven tablespoonfuls of proteids. Biliousness is caused by eating more proteids than the body really needs—except in cases where the body has an aversion to certain articles of food, which is called an idiosyncrasy and may also cause biliousness.

“We are so constituted as to stand a certain amount of waste in the blood. But if the amount becomes too large the waste settles, especially in the form of uric acid, which is likely to produce a chronic form of inflammation in any organ, or to act like a rough slack between the joints and cause friction, where normally everything would move smoothly. This condition is called uric acid diathesis, or gout, which is a common cause today of discomfort, pain and periodical or permanent unfitness for work.

“Sicknesses that are helped by a reduction of albuminous (meat and egg) foods are, first of all, diseases of the kidneys, heart and arteries, gout, rheumatism, headache, dizziness and chronic inflammation. In some people the by-products of digested albumen destroy the red blood corpuscles. Nervousness, especially when accompanied by insomnia and the very uncomfortable emotional and sexual over-irritability,—is decidedly helped by a so-called low proteid diet. . . . Every teaspoonful of albumen more than is necessary absorbs during its digestion and excretion energy which is not only squandered, but taken away from one’s general working ability.”

FOOD INTAKE VS. ENERGY OUTPUT

In a general way, the following foods should be avoided in cases of obesity: Pork, ham, bacon and the fat of all meats; white bread, biscuits, crackers and everything made from the flour of wheat, corn, rye, barley, oats, etc., which of course includes all cereals and breakfast foods. Also rice, macaroni, potatoes, corn, dried beans, lentils, milk, cream, cheese, butter, olive oils and grease of any kind. In the line of sweets and stimulants, which must be carefully avoided, are the following: Pies, cakes, puddings, pastries of all kinds, custards, etc., iced creams, candies and all drinks containing sugar or sirup sweetening, and wines, beers and liquors.

Gluten bread, eaten moderately, is all right for the fat person, but it should always be well toasted. Too much sleep is to be avoided, and naps should never be taken during the day. Some walking should be

done every day. If you have been accustomed to riding to your work, try walking instead. You will soon note a difference in your favor. Remember that indolency surely begets obesity, therefore, take all of the open-air exercise you can; and, above all, be cheerful and optimistic, for the mind exerts a powerful influence over the body.

Dr. Louis R. Welzmler, physical director of the West Side Y. M. C. A. of New York City, who has been on the job for more than twenty years, is quoted as declaring that he has never found a fat man who could not be benefited. His philosophy of fat is that unless there happens to be something amiss organically, a man is fat because he does the things a fat man does—sits around too much, eats too much, sleeps too much and loathes activity.

According to Professor Fisher, of Yale, who is a specialist in political economy and health and chairman of the hygiene reference board of the Life Extension Institute, the whole duty of the fat man is to keep the proper balance between the intake of food and the expenditure of energy; and unless overweight is due to disease, as in cases of dropsy, heart or kidney trouble, or disturbances of the thyroid or pituitary glands (which contain peculiar secretions affecting growth), overweight always means either too much food or too little exercise—or both.

If you coal up with 300 calories a day more than is required, much of the surplus goes to form fat. "So it is evident that this matter of keeping weight down is merely a problem in simple arithmetic." Fat persons are continually storing up a burden which is a menace to their health and which becomes increasingly dangerous after the age of thirty-five. So much so, in fact, that they become exceedingly undesirable risks in the eyes of the insurance companies.

Among the many examples that Professor Fisher can cite in substantiation of his claims, is that of Ex-President William Howard Taft, who succeeded in reducing his weight 75 pounds in ten months by means of a pleasant diet and moderate, daily exercise. Dr. Eugene L. Fisk, director of hygiene of the same institute, testifies that he keeps his own weight at normal chiefly by diet, accompanied by moderate exercise.

Minneapolis, Minn.,
July 14, 1919.

Dr. A. M. Loughney,
Minneapolis, Minn.

Dear Doctor:--

In reply to your request I am more than pleased to send you some photographs of myself for use in your contemplated book on fat reducing. These photographs explain better than words possibly can what your method accomplished in my case. I am glad of this opportunity to let the public know what a really remarkable fat reduction method you have.

In 1917 I was informed by my physician that I was dangerously overweight and advised to reduce. The two small photographs show how I looked at that time, tipping the scales at about 210 pounds. The large photograph, taken recently, shows how I look today, weighing 152 pounds; this being the weight I have maintained ever since finishing with your method, nearly two years ago.

I take great pleasure in recommending your mechanical reducer and dietary plan to all fat persons.

Yours very truly,

Mrs. Chas. Ring



MRS. CHAS. RING'S REMARKABLE REDUCTION



FRANK A. GOTCH

FORMER WORLD'S CHAMPION WRESTLER PRAISED DR. LOUGHNEY'S METHOD

Frank Gotch (now deceased), former world's champion wrestler, used Dr. Loughney's method for fat removal, to which he attributed not a little of his success, for the reason that by it he was enabled to keep his weight at all times at just the right point to insure him the greatest success in his work.


A letter written by him when he was at the height of his remarkable career, follows:

Seattle, Wash.,

TO FAT FOLKS:-

I use Dr. Loughney's system of fat reducing in training for all my big matches. I shall always appreciate its worth as the best on the market for the reduction of fat.

Yours truly,


CHAMPION OF THE WORLD

INCREASING WEIGHT AFTER 30 NOT NORMAL

MEN—OVER AVERAGE WEIGHTS

Experience of 43 American Companies—1885-1908.

Number of Policyholders, 186,579.

Ages At Entry	OVERWEIGHT 5 to 10 lbs.		OVERWEIGHT 15 to 20 lbs.		OVERWEIGHT 25 to 45 lbs.		OVERWEIGHT 50 to 80 lbs.	
	Death Rate Below Stand- ard	Death Rate Above Stand- ard	Death Rate Below Stand- ard	Death Rate Above Stand- ard	Death Rate Below Stand- ard	Death Rate Above Stand- ard	Death Rate Below Stand- ard	Death Rate Above Stand- ard
20-24	4%	...	4%	...	...	1%	...	3%
25-29	7%	...	10%	...	...	12%	...	17%
30-34	1%	...	14%	...	...	19%	...	34%
35-39 . . . .	...	...	...	1%	...	31%	...	55%
40-44	6%	...	...	10%	...	40%	...	75%
45-49 . . . .	...	3%	...	9%	...	31%	...	51%
50-56 . . . .	...	2%	...	21%	...	24%	...	49%
57-62 . . . .	...	2%	...	25%	...	12%	...	38%

The above table represents the experience of 43 American companies, 1885-1908, with 186,579 policyholders; from Medico-Actuarial Mortality Investigation, Vol. II, Page 13, compiled and published by the Association of Life Insurance Medical Directors and the Actuarial Society of America. According to the Medico-Actuarial Committee, the standard death rate is that experienced by average insurance risks of the same age.

Fat persons have a relatively smaller number of working cells in proportion to their body weight than do thin persons. This for the reason that fat cells do not work and that there is less bodily surface exposed in proportion to the body weight, consequently less heat loss. Fat persons are not so active as their more fortunate brethren and do not need so much fuel. Yet the fuel is being supplied continually, in their heavy diet. And all of this that is not burned up is stored in the form of additional fat.

In a general way, in cases of obesity, the menus should be light, with plenty of fruit and water. Three meals a day is the rule, with no lunching between meals. For breakfast a poached egg or two, with well toasted bread and a small piece of butter, may be taken. For dinner, the choice of chicken, wild game, lean meat (except pork) or fish, and vegetables of low caloric value, such as celery, spinach, lettuce, string beans, cucumbers, carrots, cabbage, tomatoes, Brussels sprouts, turnips, etc. For dessert, cooked, unsweetened fruits, melons, tapioca pudding, etc. It is well to drink a glass of hot water each night on retiring.

BEWARE OF "ANTI-FATS"

By the natural law of proportion, fat should constitute about one-fifteenth to one-twentieth of one's weight. A person's weight may vary ten to fifteen pounds either way, from the accepted standard of weight to height, without its being indicative of disease—or even discomfort. A normal (reasonable) amount of fat is desirable, because it not only improves the personal appearance, but is also necessary to protect the various organs and maintain their temperature. It also furnishes nutrition in time of need. For these purposes it is stored in cells in various parts of the body, although more plentifully in some parts than in others.

If the proportion is less than one-twentieth, leanness or emaciation is observed. A greater proportion than one-ninth or one-sixth, constitutes corpulence, and corpulence is a poor criterion of health. On the contrary it has the power to create much mischief, because a condition of excessive fat necessarily creates heaviness and impedes respiration, circulation, locomotion, digestion and many other vital functions, to a serious degree.

In fat persons all of the cellulo-adipose structures are filled to distension, more noticeably about the subcutaneous tissues, the breast and abdominal walls; also in the omentum and mesentery; on the surface of the heart and about the kidneys. If this morbid accumulation grows to be excessive, these all become buried in fat, which mechanically interferes with both function and nutrition.

Many anti-fats are on the market, each one recommended for reducing fatty tissue and counteracting its return. Among these are iodine, bromine, mercury, lead, arsenic, liquor potassium, lemon juice, sour wines, vinegar, purgatives, starving, vapor and other forms of moist heat baths, smoking, chewing and a long list of other mediums. When these are used in sufficiently large amounts and over a long enough period to destroy any considerable quantity of fatty tissue, they will injure other structures and are dangerous to health.

All of these act by saponifying the fat or by producing numerical cell-atrophy, either of which exerts powerful influence on the lymphatic and absorbent systems. They not only cause reabsorption and destruction of oil, stearin, margarin, protoplasm, nuclei and other physiological constituents of the fat cells, but go further and annihilate myriads of cell-membranes, red blood globules and other normal and essential elements. As these perish, vitality is reduced and health is impaired. While reducing the fat, many of these articles also act as slow poisons. Damage, or complete ruin of the alimentary mucous membranes and functions of digestion are liable to occur. This will cause malassimilation and malnutrition, with consequent repugnance to food. Fatal affections may thus be induced.

A FAT-FORMING BREAKFAST

Starch and sugar, natural carbohydrates, are found in abundance in many of our standard foods, such as potatoes, grains, and many of our native fruits, peaches, plums, sweet apples, etc., sufficient to supply the body. When we add to this natural sugar the quantities of the refined article that most persons obtain from sugared foods of all kinds, pastries, desserts, sauces, confections, etc., together with what is used in the tea and coffee, the digestive and assimilative organs become greatly overburdened.

Most persons think of sugar only as a sweetener to make their foods taste better, and do not stop to consider that it is a food. Regarded as a food, sugar belongs in the carbohydrate class. We secure enough carbohydrates from other foods during the day to supply the average require-



FROM CORPULENCY TO NORMAL WEIGHT



A FAT-FORMING BREAKFAST

You may have often wondered why it is that so many Americans are growing fat and lubberly. You can see them wherever you go—among all classes, and in all walks of life—lumbering, wheezing individuals, in whom all semblance of physical beauty and normal bodily proportions have been sacrificed to the knife and fork habit. The above illustration shows the average breakfast with many, consisting of ham and eggs, griddle cakes with syrup and butter, prunes or other sweetened sauce, coffee, cream and sugar. Read about it on pages 20 and 21.

ment. Then why increase the intake of sugar beyond the requirements of the body?

The average breakfast with many consists of fruit, a cereal, toast and coffee. It is varied in others by eggs, bacon, ham and potatoes and griddle cakes. For fruit, the selection is prunes, bananas, baked apple, oranges or grape fruit. Prunes already contain sufficient sugar. Bananas, if ripe, have their starch transformed into sugar. There is plenty of sugar in the apple naturally, and the same with oranges and grape fruit.

Now analyze the average breakfast and see how much unnecessary sugar is consumed. In most instances sugar is added to every one of the fruits. The cereal is covered with sugar, then cream is added, which latter, by the way, being a fat, is an excellent substitute for sugar. The chances are that the baked apple, although cooked with sugar, will receive another generous supply. The coffee, likewise, will come in for its helping of sugar—anywhere from one to three teaspoonfuls—in addition to the cream.

The fat of the bacon and ham and the eggs supply plenty of fat—more sugar substitute. If the griddle cakes are of buckwheat, there is more fat in the buckwheat. These are flooded with syrup, containing an abundance of sugar.

And now, when you consider that in the foods as served, there was enough sugar and carbohydrates to perfectly supply the needs of the body, is it any wonder that people grow fat and have indigestion and constipation and kidney trouble and the hundred and one other ailments when they persist in eating such meals?

The amount of food you need depends upon your weight and the work you are engaged in. A man or woman weighing 150 pounds and doing no work, requires food yielding 2,000 calories per day, or $13\frac{1}{3}$ calories per pound of body weight. A man doing moderate work, as a carpenter, mail carrier, house worker, etc., requires 2,700 to 3,000 calories per day. Of the total amount of food required, the protein should represent not more than 10 per cent, for example, 300 calories from protein for a person requiring a total of 3,000 calories per day.

NORMAL WEIGHT MEANS PHYSICAL FITNESS.

Normal weight goes hand in hand with physical fitness, which means vitality, energy and strong-muscled, clear-headed health, and the way to reach normal weight is to acquire that kind of health; and, vice versa, by getting oneself down to normal weight, not by the drug or starvation methods, but in the natural, easy manner which my method provides, this much desired state of good health will result.

Don't cling to the idea, as so many fat persons do, that in **your** particular case it is natural to be fat, and consequently impossible to reduce to normal weight. You **can** get rid of your excess burden if you really want to, and the method will be simplicity itself. Just a little common sense and perseverance are required. By use of the properly balanced diet I recommend you will continue to be perfectly nourished all the while you are losing weight, and it doesn't provide for starvation meals—they are not necessary. You will be getting all of the elements that go to the making of blood, nerve tissue, muscle tissue and bone, together with the properties that enable the body to maintain a normal alkilinity.

You might think that a man is well nourished because he is big and fat, but the chances are that he is not. Fat is no indication of a properly nourished body. It merely means that the nourishment is good in respect to fat, but is no indication that the possessor of the surplus burden is properly nourished in respect to the supply of iron, lime, potassium, magnesium, and various other elements that are absolutely essential to bodily health. In fact it is not infrequently the deficiency of these necessary elements that causes the fatness.

It is just a simple, common-sense principle that if these necessary elements are supplied, while at the same time, the fat-forming foods are restricted, the weight must necessarily be reduced. Therefore, the rule must be plenty of fruits, greens and vegetables, all of which contain these elements, while you cut down very materially on the starches and sugars. It is not necessary or advisable to entirely eliminate fat from the diet. A small amount of butter, cream or meat fat is permissible if one will practically avoid the carbohydrates.

An excellent day's menu—one which will supply the elements required, and at the same time reduce the fat-forming portion down to where it belongs—is the following: Breakfast, entirely of fruit, such as apples, oranges, grapefruit, or berries or grapes, according to season; two glasses of water. Luncheon, a double portion of a green salad or fruit salad. For instance, lettuce, tomatoes, celery and the like, with or without an egg. A glass of buttermilk may be included. For dessert, a baked apple. Evening meal, spinach with egg, or a liberal slice of lean meat with a vegetable dinner, together with the vegetable juices. Or a slice of meat with a combination green salad, a glass of milk or buttermilk, and an apple and orange salad, or berries.

BULKY FOODS NECESSARY IN REDUCTION

Few fat persons fully realize what an amount of fuel value they get in certain foods that they eat very carelessly; nor what a small amount of fuel value there is in other foods, in spite of the fact that they satisfy hunger. As an example: Based on the average price in the cities, it would require \$10 to \$12 worth of lettuce and tomato salad to furnish 2,500 calories, which is about the average fuel requirement for a day. About 40 cents worth of butter or 15 to 20 cents worth of sugar would supply the same amount of energy.

From the above it is easy to understand how an abundance of vegetables, such as lettuce, tomatoes, celery, spinach, carrots and fruits in general, (which have a low caloric value) and the cutting down of sugar, butter and other foods of high fuel value, would greatly reduce the fat-forming elements in the food, yet would fill the stomach and satisfy the hunger. It must be understood that hunger is largely dependent on the contractions of an empty stomach, and not as supposed by many, on a bodily craving for food.

In cases of obesity, if the amount of energy-forming food is sufficiently reduced, and the regular daily application of my Mechanical Fat Remover persisted in, there is nothing that can possibly prevent a reduction in weight. All that is necessary is to reduce the food intake to from say 1,200 to 1,500 calories by allowing the bulky foods, vegetables,

fruits, etc., to predominate in the daily menu, thereby satisfying the hunger cravings.

KEEP DAILY RECORD OF WEIGHT

While using my method for removing obesity it is well for the reducer to have a pair of scales handy and keep an accurate record of the weight, day by day. The weight should be taken at the same time each day, when the effect of the daily routine of water and food intake and of the use of the mechanical means and exercise will be similar. The maximum loss on a complete fast would be about one pound a day. The average daily loss in weight while using my method may be anything up to this, depending of course on how faithfully directions are being followed. This record of daily weight will furnish pretty reliable evidence as to whether the reducer is carrying out his or her part of the deal faithfully.

In arranging the proper diet to be used in obesity one must first consider what diet is necessary in order to maintain normal weight. If this calls for 2,500 calories, then by reducing the number of calories to 1,250, it is to be presumed that the loss will be approximately one-half as much as on a complete fast, or one-half pound per day. If reduced only to 1,875 calories, the loss should approximate one-fourth pound per day.

As elsewhere stated, there need be no particular hardship entailed in very materially reducing the number of calories below that which would maintain constant weight. It is only necessary to decrease the amount of concentrated foods, which are high in calories, and increase the bulky part of the diet, which is low in calories, and which includes bran, vegetables, fruits and all of the foods that have a considerable portion of roughage.

THOROUGH MASTICATION IMPORTANT

A very important rule to observe in this connection is that of thorough mastication of all food. This will have a remarkable effect in making the lessened meal thoroughly satisfying, causing one to feel that



HOW I OVERCAME MY EXCESS FAT



IN THE BRIEF PERIOD OF 32 DAYS

he has had a "square meal," although based on his old standards he has not. It is claimed by many that the remarkable results achieved by Horace Fletcher's methods of eating are not due directly to chewing, but rather to the lessened amount of food which the increased chewing leads to.

This, in the author's opinion, is the correct explanation, for most of us through habit, eat our meals too rapidly. When food is bolted down and only half chewed, much more of it is taken than is required to satisfy hunger. The more thorough our mastication the less the food required, which fact may be easily proved to one's own satisfaction at any time. If you have been accustomed to eat your meals in fifteen minutes, try the experiment of extending the time to thirty minutes, chewing your food twice as long as formerly. You will find that you will feel well filled up and thoroughly satisfied on a considerably smaller quantity than heretofore.

This manner of eating will make very successful and pleasant the plan of living, in part, off our accumulated burden of fat, and when followed faithfully in connection with the use of my Mechanical Fat Remover, will produce very gratifying results indeed. Along with this, it is an excellent plan to use a little auto-suggestion on yourself. In other words, decide, in advance of your meal, just what and how much you are going to eat. A person who knows in advance just what he is going to do, and firmly makes up his mind to do it, will experience no difficulty in quitting when he has it done.

The menus for obese persons given on pages 26 and 27 are the ones which I carefully prepared and used so successfully during my own reduction. By alternating these according to one's desire, sufficient variety of food will be had to thoroughly please every palate, at the same time satisfying the hunger in a very satisfactory manner each day of the week.

Menus for Obese Persons

Recommended Breakfasts

No. 1.

Peaches or plums or the juice of one or two oranges; one or two slices of whole wheat bread, thinly buttered; glass of water.

No. 2.

Grapefruit, without sugar, or other fruit juice without sugar; raw vegetables, amount desired; glass of water.

No. 3.

Raw apples; gems or muffins, preferably without butter, or very thinly buttered; glass of water.

No. 4.

Ten (or less) raw, soaked prunes, no sugar; baked potato, including jacket; one cube of butter; glass of water.

No. 5.

One baked banana; whole wheat bread (not to exceed two slices); choice of fruits; glass of water.

No. 6.

Baked apple, with cream, no sugar; one glass milk.

No. 7.

Full breakfast of sweet fruits. (This is very beneficial and is especially recommended for daily breakfast.)

SELECT YOUR CHOICE OF ANY ONE

Recommended Luncheons

No. 1.

Clear beef broth, lightly seasoned; choice of any strictly lean meat, except pork; one non-starchy, cooked vegetable; combination salad; one glass of cooked vegetable juice.

No. 2.

Choice of any sea food, liberally sprayed with lemon juice; raw chopped cabbage (no vinegar); one cooked, non-starchy vegetable; glass of cooked vegetable juice, or fruit juice.

No. 3.

Cheese, any kind (not spiced); celery; young onions, including tops; choice of one cooked, non-starchy vegetable; glass of fruit juice or cooked vegetable juice.

No. 4.

Raw, sweet fruits; two glasses milk.

Menns for Obese Persons

Recommended Luncheons—Continued.

No. 5.

Exclusive meal of fruit. Select one or more acid fruits or one or more sweet fruits. Do not combine acid and sweet fruits; glass of water.

No. 6.

One or more oranges; one egg, any style, except fried; spinach, without vinegar; glass of water, if desired.

No. 7.

Dried onion; dried or smoked fish; raw, non-starchy vegetables; water or fruit juice.

SELECT YOUR CHOICE OF ANY ONE

Recommended Dinners

No. 1.

Baked potato (include jacket); raw acid fruits or raw sweet fruits (do not combine); one cooked, non-starchy vegetable; one glass of water or fruit juice.

No. 2.

Whole wheat or gluten bread, well toasted; cooked vegetables; combination salad; glass of cooked vegetable juice or fruit juice.

No. 3.

Macaroni or spaghetti (without tomatoes); one or more raw vegetables; one or more cooked vegetables (except tomatoes); glass of cooked vegetable juice or fruit juice.

No. 4.

Raw fruits, any kind, except bananas; whole wheat, bran or gluten bread, well toasted (not to exceed two slices); one average size cube of butter; one glass water.

No. 5.

Corn or bran muffins; one average size cube of butter; raw sweet fruits, any kind except bananas; glass of cooked vegetable or fruit juice.

No. 6.

Two bananas, peeled and baked fifteen minutes; raw sweet fruits, except dates or figs; glass of fruit juice.

No. 7.

Ten or fifteen raw, soaked prunes (do not add sugar); one glass sweet milk or buttermilk (latter preferred).

SELECT YOUR CHOICE OF ANY ONE

Menus for Obese Persons

EXTREMELY STUBBORN CASES

Recommended Breakfasts

No. 1.

Fresh sweet fruits; glass of milk.

No. 2.

Fifteen (or less) raw soaked prunes, no sugar; juice of orange, in water.

No. 3.

Acid fruits; cheese, cream or cottage.

No. 4.

Fresh sweet fruits; poached egg; juice of orange, in water.

Recommended Luncheons

No. 1.

Tomato soup; turnips, peas; vegetable salad; fruit jello; fruit or vegetable juice.

No. 2.

Baked squash; parsnips; vegetable salad; lean beef; vegetable juice.

No. 3.

Vegetable soup; lean meat, any kind except pork; string beans; vegetable salad.

No. 4.

Roast beef; cooked non-starchy vegetables; cabbage slaw, cold; vegetable juice.

Recommended Dinners

No. 1.

Fresh fruit; cheese, cream or cottage; orange juice.

No. 2.

Combination salad; stewed onions; spinach; vegetable juice.

No. 3.

Fresh fruit; watermelon; fruit juice.

No. 4.

Raw apples; combination vegetable salad; grape juice.

SELECT YOUR CHOICE OF ANY ONE

Alkility of Blood Important

WHILE reducing weight particular attention should be paid to getting and keeping the blood in perfect condition, thereby maintaining the vitality of the body at a high level. For this purpose the iron, mineral salts, vitamins and other elements that are so generously supplied from vegetables, potatoes and wheat bran are invaluable.

In cooking the succulent vegetables, such as spinach, dandelion, carrots, parsnips, squash, onions, green peas, beans, corn, cabbage, cauliflower, etc., care must be observed in order to preserve all possible of the valuable elements. This is best accomplished by cooking them in their own juices, and in that way they are not only rendered more nutritious, but also more delicious to the taste.

As the juice or liquor of the vegetables is by far the most nutritive portion, it should never be discarded, but should be served together with the bulky portion, or may be drunk separately or served like soup. The bulky portion of the vegetable also has its important function to perform—that of aiding digestion and elimination, by reason of the roughage it supplies. Read my chapter, “Modern Methods of Cookery,” for valuable information concerning best methods of cooking vegetables, in double boiler, etc.

Many fat persons are troubled with a condition of mild acidosis, due to their overeating of refined foods, notably white flour products, such as white bread, biscuits, crackers and the like, as well as too much corn starch, refined sugars, sweets, etc. In these cases the blood has been robbed of some of its most valuable ingredients. These ingredients must be supplied in order to bring the blood back to normal and to build up the general bodily health and vitality.

In these cases wheat bran is of great value. Select clean, fresh bran, and to one part bran add two parts water (each by weight). Allow this to leach for five or six hours at not over 120 degrees Fahrenheit, then strain off liquor. Drink a wine glass full of this liquor each

morning, before breakfast. In addition to this, take one tablespoonful of bran morning and evening. This may be taken by mixing in cold water and drinking it down quickly. If the bowels become too loose, discontinue the above until they regain normal.

For either the noon or evening meal boil cabbage, turnips, carrots, parsnips, spinach and onions together, or as many of this combination as possible, being careful to preserve all of the juices. Drain off this juice and partake of it as soup, in liberal quantities. With it may be included one or two slices of well toasted whole wheat bread. Each day, or as often as potatoes are boiled, first peel them and reserve the peelings. Boil the peelings for twenty to thirty minutes, then drain off the liquor and drink a glass or two of it each day. The bran and bran liquor, vegetable juice and potato peel liquor are to be used as above directed, in addition to the regular menus I have prescribed elsewhere for fat persons. (If menu provides for bread or toast, then omit the toast with the vegetable juice soup mentioned above).

The following list of foods, in season, is especially recommended in connection with the obesity menus:

Spring and Summer

Asparagus	Carrots
Peas	Corn (green)
New Potatoes	Cauliflower
Onions	Beans
Radishes	Squash
Spinach	Turnips
Lettuce	Romaine
Dandelion	Tomatoes
Cabbage	Okra
Artichokes	Egg Plant

Fall and Winter

Beans	Egg Plant
Potatoes	Tomatoes
Carrots	Okra
Turnips	Parsnips
Beets	Pumpkin
Cauliflower	Dried Peas
Brussels Sprouts	Lentils
Sweet Potato	Cabbage
Corn (green)	Onions
Squash	Celery

DECIDEDLY STARCHY FOODS

In extremely stubborn cases of obesity it is advisable to entirely withhold starches from the menus until an appreciable reduction has been effected. Starch predominates in all the cereal foods and certain vegetables, as may be seen from the following table:

	Per Cent		Per Cent
Wheat bread	55.5	Oatmeal	68.1
Wheat flour	75.6	Cornmeal	71.0
Graham flour	71.8	Rice	79.4
Rye flour	78.7	Potatoes	21.3
Buckwheat flour	77.6	Sweet Potatoes	21.1
Beans	57.4	Starchy foods require cooking.	

NON-STARCHY VEGETABLES

Carrots, beet tops, beets, spinach, parsnips, cauliflower, turnips, kohlrabi, cabbage, kale, stewed celery, corn, peas, green beans, asparagus, rutabagas, oyster plant, egg plant, dandelion, onions, summer squash, salsify, okra, Brussels sprouts, tomatoes, endive, chard.

By eating all the food needed at breakfast and mid-day, and only some fruit and slices of bread in the evening, one is sure soon to reduce the weight considerably. Sleep and rest, following a heavy evening meal, is conducive to taking on weight. This is important to know, as many people, in their effort to lose weight, eat only two meals a day and do not succeed because they take the heaviest meal at night.

A healthy person can lose from four to six pounds by taking for one week nothing except a quart of milk per day in four equal portions, with a teaspoon. If very hungry four apples may be added per day. People who are not well should follow this regime only under a doctor's advice.

By eating nothing for a week except old dry bread, and drinking nothing except three glasses of warm and light wine every third day, and taking packs at night, as explained elsewhere, healthy people feel fine and reduce from one to two pounds a day. The packs at night give an astonishingly restful sleep and take away thirst.

Dr. Loughney's Mechanical Fat Remover

THIS little device at once attracts by its simplicity and by its ease of application. It is the result of much careful study on the part of its inventor, who sought to perfect a means that could be applied easily by the patient, without an instructor, and without the aid of a second person; and at the same time, a device that would be easily portable and that could be applied without discomfort and without proving objectionable to the most refined lady or gentleman.

It is constructed along purely scientific lines. It is the logical, natural method of breaking up and disposing of fatty tissue, without being in any way detrimental to the health of the patient. On the contrary, its use will prove highly beneficial to the general health, as will hereafter be explained.

Every reputable physician, and every authority on the subject of fat reduction, will testify to the value of massage, properly applied, in the removal of obesity; as well as to its general therapeutic value. For thousands of years massage has been successfully used in various diseases; in fact it was employed with more or less success long in advance of the discovery and practice of medicine.

Splendid results are obtained from massage in breaking down and removing fatty degenerative tissues, as well as for overcoming emaciation and building up healthy flesh. Its effect is to stimulate a flow of blood to any portion of the body to which it is applied, and to concentrate upon that part its reconstructive operations.

The processes of digestion and elimination are dependent upon the muscular strength of the bowels, just as our ability to walk is dependent on the strength of the muscles of the legs. Therefore, the cells composing the muscular fibres of the intestines are accordingly vitalized and strengthened when the tissue-creating functions of the blood stream are centralized on them by proper massage.

Dr. A. M. Loughney,
Seattle, Washington.

Dear Sir: You may be glad to know what the results have been since using your Fat Reduction Method. When I first came to see you I weighed exactly 240 pounds, had been too fat a good many years, and it was getting troublesome. My mind was bad and my heart was becoming affected. I tried a good many "Anti-Fats," but they did me no good at all. After nine weeks of your method, which I found most pleasant, feeling better right along, I weighed 190 pounds, which is just right for my height, and have been at that weight ever since. I enjoy walking and do not "puff" after exerting myself; my heart action is fine and I feel better in every way. I am surely convinced that you have the only scientific and correct method of reducing fat, and am writing this to show that I fully appreciate what it has done for me.

*Yours, Truly
Frank J. Mudgett
205 1/2 First ave*



FIFTY POUNDS LIGHTER IN NINE WEEKS' TIME



THE EASY, QUICK METHOD OF REDUCING

In my Mechanical Fat Remover will be found a device that applies the principles of massage in the overcoming of obese conditions and constipation in a most satisfactory and easily-applied manner. It is particularly valuable since no knowledge of hand massage is required in order to successfully apply it, with the most gratifying results, whereas in hand massaging a great deal of skill and training is necessary.

My Mechanical Fat Remover is thoroughly efficient and removes fat in a scientific manner. It is inexpensive, thoroughly practical and will last a lifetime. There is nothing about it to wear out. Its first cost is the only cost, and it is withal, the most practical article on the market for the purpose. No second person is required to operate it, except in reduction of the back or buttocks, in which case it is advisable to have it applied by a second person.

In action it has much the same effect as the most careful hand massaging, and in conjunction with the scientifically balanced menus given elsewhere, will quickly reduce the stomach, abdomen, hips, thighs, back, buttocks or breast. The reduction is under complete control of the patient, enabling one to bring any part of the body to its correct proportions. At the same time the little device exerts a decidedly beneficial effect on the entire intestinal tract. The stomach, liver, intestines, spleen and bowels, all encased in the abdominal cavity, are very much invigorated by its use.

It should be understood that this combined method attacks only the abnormal portions of the body and does not detract from the general symmetry, or facial appearance of the patient. On the contrary, an improvement in general looks is noted. The face becomes younger in appearance, the traces of flabbiness disappear and a healthier, happier look is noticeable after the treatment has been practiced diligently for a reasonable length of time.

Most obese persons have tried various methods of fat reduction, the commonest being starvation diet, hard work, sweat baths, physical culture, all kinds of nostrums, and scores of others. Such reducing plans nearly always prove ineffective. To be efficient, a method must be inter-

esting. It cannot prove thus unless the patient is able to note results coming from its use within a reasonable period. And the reason so many methods fail is that they are either positively unpleasant and irksome, or, as in the case of the exercise method, it usually requires more time than the patient is enabled to devote to it.

For the exercise method, therefore, the busy business man has not the time, even though he has the inclination. He finds it inconvenient to always meet with his classes or instructors at a certain hour, and to undress and dress for the gymnasium work, or other exercises. What he desires is a method that will fill the requirements without conflicting with his daily pursuits or pleasures. Something that will take up but little of his time each day and that can be applied by himself and not become irksome, or impose upon him a disagreeable task.

Where my Mechanical Fat Remover is used the patient very quickly becomes interested and enthused over it, for results begin to show after a few days of its use, provided it is applied according to directions. And particularly is he pleased because of the ease with which it is used. It has often been termed "the lazy man's reducer," for the reason that it can be applied in any position—standing, sitting or reclining—in the office, at home, or while traveling aboard train or ship. It can best be applied while lying on one's back in bed. There is no fatiguing exertion in applying it, merely an easy, natural movement of the arms, and it need be applied but a few moments at a time to produce the best results.

In using, merely roll the device over the obese part, with moderate pressure, applying directly on the skin, or over one's night dress or undergarments. It is so small and light that it can be carried in a lady's handbag without inconvenience. It is well for the fat person to keep it handy—under the pillow or under the bed—and apply it for a few moments before going to sleep and again on awakening in the morning. It is soothing and restful to the nerves. No harm can possibly come from its use, and it is so thoroughly efficient that no doctor can possibly find objection to it or do otherwise than recommend it highly.



"WAKE UP! IT'S TIME TO REDUCE"



MORNING ASSAULT ON THE ENEMY (FAT)

How My Fat Remover Was Evolved

UP to a few years ago I had always been an active man and my weight had been preserved at normal. However, a long siege of confining office work told on me to such an extent that I took on superfluous flesh to an alarming extent. It began to worry me greatly and not only that, I found it exceedingly uncomfortable, and its ill effects on my general health became plainly discernable.

It was this fact that led me to a careful study of the subject of fat, and which ultimately resulted in the mechanical device for successfully removing it—now known as Dr. Loughney's Mechanical Fat Remover. This device, supplemented with the proper menus will positively build and strengthen the important parts of the body and remove such surplus fat as is necessary to return to a normal condition of weight.

The splendid results I obtained in my own case furnished absolute proof that I had solved the perplexing problem of how to get rid of surplus flesh, and I accordingly took steps toward securing patents covering the device. When I first began using my Mechanical Fat Remover I weighed exactly 212½ pounds, whereas my weight should have been 185. After four weeks' use of the device I had reduced myself to normal weight. The photographs shown herein will furnish convincing proof of this.

Fatty tissue acts as a cushion between muscles, bones and nerves, taking off jar and friction, and a normal amount of it is necessary. But when it exists in greater proportions than the body requires it becomes a nuisance and a menace to health and even life itself.

Then again, it interferes with normal nerve function, as for instance, many cases of paralysis are caused by excessive fatness. In areas of fat, the lymphat drainage becomes greatly diminished as the cells of the glands diminish into fat cells. Their function of carrying waste matter out of the body by the lymph (watery portion of the blood) is lost in many areas and dropsy and bloating is the result. Again, where the

lymph, which contains the nutrition or food from the blood, does not reach the muscle cell in proper volume, the cell starves and weakness is noticed in the muscle. Later, atrophy or shrinkage of the muscle is observed, and finally a complete disintegration of muscle takes place. And when this condition affects vital organs, such as the heart, death occurs.

Scientists, investigating and studying the leucocytes or white blood corpuscles, have discovered that these cells possess an appetite to eat or absorb certain substances in the body. First, the digested proteids called peptones, in the small intestines, are absorbed by these white cells, and carried through the intestinal wall into the blood. Remember that these cells possess a movement of their own, called ameboid, and that they are continually traveling through our body outside of the regular blood channels, and as they eat up many things destructive to life and health, such as bacteria and poisons, we can properly consider the white blood cell as being the scavenger of our body.

You will further understand that the white blood cell, when it comes into existence, is of a very high order or expression of cell life, and that it is also subject to the same general law of degeneration, or a passing from a higher to a lower state of life, owing to the fact that it has a function to perform, peculiarly different from the other cells in our body, that of eating or transforming certain substances in the body into a different state, so that these substances become non-injurious to the other cells, or may be assimilated by other classes of cells as a food.

In the performance of this work, the white cells degenerate, as I have stated before, passing to a lower state of life, becoming fat cells, and elements of stored-up energy, that may be brought into an active condition or state again in several ways.

In cases of starvation, the fats in the body are used up to supply energy, such as heat and motion (vital action in the body) which shows that nature can use this stored-up element from which to supply energy. It is brought about and into use through the action of new white cells, eating and preparing it for assimilation, by the other cells of the body.



REDUCING BUST, ABDOMEN AND HIPS



REDUCING SHOULDERS, BACK AND BUTTOCKS

In fevers, the blood is forced externally (to the outside parts). This volume of blood brings to the parts a large amount of oxygen. This sets up a chemical state, where the fat cells are and oxydation of them take place, and great volumes of heat are liberated, through the burning up of this carbon.

It is well to remember that adipose tissue (fat cells) is stored up where, or very near to where, the arterial blood passes through the capillary cells, back into the veins; and so everything that influences a congestion of blood in the capillaries influences a breaking up of the fat cells, because of the action of the blood upon them.

Any action upon a part, such as friction, or massage, produces locally an effect which we know reduces fat.

While my Mechanical Fat Remover is recommended primarily for removing fat, yet it will do more. Its beneficial effect in cases of constipation is truly wonderful. It invigorates and strengthens all the organs of the abdominal cavity, as heretofore explained. Physicians freely recommend it in cases of sluggishness of these organs.

It is an especially pleasant method for women's use, owing to its ease of application. Its effectiveness is particularly pronounced in removing fat from over the stomach, abdomen, hips and breast. Applied over the shoulders and back by a second person it becomes extremely pleasant and removes the abnormal fat in a surprising manner.

EMACIATION

Strange as it may seem, emaciation (abnormal thinness) is largely produced by overeating. This, as well as wrong combinations of foods, causes hyperacidity, malassimilation, stomach and intestinal congestion, fermentation and auto-intoxication. When the digestion is impaired and an excess of food is taken, nature strives to force it out as a foreign substance and decomposes it by fermentation. It is thus changed into toxic substances and instead of furnishing nutrition to the body it has the reverse effect, attacking and consuming fat, tissue and energy.

One may consume only the total quantity of food (as represented by calories) which the body can use, yet by overeating of one kind of food

and taking an insufficient quantity of another, his system will be thrown out of balance. This person will lose weight on account of the double handicap under which he is struggling—a deficiency of nutrition on the one hand, and the additional energy consumed in eliminating the excess on the other, the latter being too great to be appropriated by the body.

Plenty of fruits and vegetables (roughage foods) should be eaten. Moderate exercise should be taken each day, the same as in obesity cases, and my Mechanical Fat Remover should be used faithfully over the stomach and bowels each morning and evening to assist these important organs to function properly. Two tablespoonfuls of wheat bran should be taken with the morning and evening meals.

In getting back to the health state, whether from an emaciated or from a fat condition, it is of the utmost importance that the food be well chewed. See chapter on Mastication of Foods. Meals must be eaten at regular hours each day, with no lunching between meals. Deep breathing and proper carriage of the body is also of great importance. You can acquire this habit through my health culture exercises and it will become as second nature to you. You will learn to practice deep breathing unconsciously, both during your waking and your sleeping hours. Dress lightly and avoid as much as possible, overheating. Keep your home and office or place of business well ventilated and walk as much as possible.

Emaciated persons may eat, for breakfast, as large a bowl of cereal, with cream and sugar, as desired; whole wheat bread with plenty of butter and a cup of one-third of any breakfast beverage desired with two-thirds of a glass of cream. After this has been consumed, sweet fruits or whatever else is desired may be eaten. Dinner should consist of substantial foods, with plenty of whole wheat bread and butter, also plenty of fresh or cooked vegetables, together with the vegetable juice, in order to secure the roughage, the vital mineral salts, vitamins and the iron that is needed to build up the blood. Supper should be along the same general lines as dinner and breakfast. Sleep at least nine hours out of every twenty-four. Drink plenty of water with meals, also between meals.

Foods For Anemic Persons

MILK is one of the ideal fattening foods for the thin man. Every abnormally lean man will take on weight if he persists for a reasonable time in a milk diet. This fact is responsible for various sanitariums that have sprung into existence in this country in recent years and have prospered, administering to their patients principally milk and rest. Of course they do not represent their curative agencies as being these in so many words, but that is what they are in reality, camouflaged under much higher sounding titles.

In anemia there is a deficiency of iron in the blood. The kind of iron required is that which is obtained from all kinds of green vegetables, oatmeal, wheat, and in some degree from rice, etc. There is a small percentage of iron in milk and, when accompanied by rest, milk will produce weight. But I do not recommend that you live solely on milk as some may advise you. It should constitute an important portion of a well arranged diet, including vegetables, potatoes, sweets, fats and whole grain products. The milk should be taken slowly, and should never be used to wash down other foods.

When a child is born it has stored in its liver all the iron it needs for several months. Thus it does not have to rely on the iron it receives from its food. As the child becomes older and this supply of iron in the liver becomes depleted, it then begins to obtain this important substance from other foods. Every adult must continually replenish this iron supply by eating the right kind of foods, which contain iron. Insufficient light and fresh air also contribute toward causing anemia. As evidence, note the prevalence of the disease among milliners, factory operators and all who are deprived of much sunshine and who are forced to breathe much impure air.

Intestinal autointoxication is one of the common causes of anemia. Prolonged nursing in women, excesses in either sex, hemorrhage and various forms of disease will cause anemia. Chronic dyspepsia is perhaps

the most frequent cause of anemia. It is impossible for a person to be long dyspeptic without developing anemia.

To effect a cure in this complaint, as in all others, whatever is causing the trouble must be removed. If the cause is dyspepsia, that must be corrected. If the cause is wrong combinations of food, or wrong proportions, then these must be righted. If too little food is being taken, then the quantity must be increased. In the latter case, however, one must be careful to avoid the mistake of taking too much rich food of a stimulating nature, or too much animal food, especially when the digestive organs are impaired. The diet must be so arranged as to provide plenty of the mineral salts and vitamins, together with roughage, to insure proper movement of the bowels.

Equally as important as the diet is the necessity for taking regular systematic exercise, and the time consumed for this need not be more than can be spared by the average business man. Ten or fifteen minutes' exercise in the morning and a reasonable amount of walking each day should be sufficient. It is not necessary to walk for long distances, but make the walk a regular feature of each day's routine and learn to march briskly, with head erect, shoulders back, chest out, breathing deeply of the fresh, invigorating air.

In this connection it may be stated that many persons, including men, women and children, are semi-invalids just for the reason that they have never learned the value of a little exercise every day, together with correctness of posture and carriage and right breathing. The set of exercises that are to be found in my "Health Culture" pages will correct these errors if faithfully followed for a time, and will induce not only unconscious deep breathing but also proper carriage of the body in walking. These exercises will bring about correct position of the body, in which each organ will be kept in its proper place and ample room provided for its proper functioning.

The style of carriage which these exercises will induce—shoulders square and back, chest arched, head erect and the body well stretched from the waist line up—will not only work wonders in one's personal

appearance; it will form the foundation for normal weight and robust health. Every child should be taught these exercises and impressed with the importance of correct posture and carriage. This will soon become a habit, and will prove one of the very best health insurance policies in later life.

A noted physical training instructor has said: "The human organism is most tolerant and patient and will stand for a very considerable amount of neglect and abuse, and even then it will not rebel without first sending out signals of warning which it is well to heed. But why wait for these warnings when this organism, so responsive and so very considerate, demands so little time and effort to keep it in proper, healthful condition?"

"If children are taught correct posture and the carriage that goes with it, and if, besides this, we can succeed in awakening in them a craving for daily indulgence in wholesome bodily activity, we shall be taking a long step toward the regeneration of our race."

As the proof of the pudding is in the eating, so I urge you, as a reader of this book, not to be skeptical about the value of these healthful exercises and say "it can't be done." Just give them a trial for thirty days and see what they will accomplish for you in the way of better health and vitality. Spend ten or fifteen minutes each morning working them out with some degree of vigor, and of course breathing deeply throughout. Then, instead of riding to your work, try walking for a month. Take an inventory of yourself at the end of the month and see how much better you feel. The difference will amaze you, just as it has everyone who has given them this try-out.

You will not need to lose even a minute from your business in order to do this. Merely set your alarm clock a few minutes earlier than you have been accustomed to. Spend a little of the time thereby gained in the health exercises; utilize the remainder for walking briskly to your place of business. And then go to bed each night at a regular, reasonable hour. It will not be necessary for you to lose an hour or two in going to a gymnasium, undressing, dressing and the like. The gymnastics I

am advising will take only ten to fifteen minutes of your time—in your own home. And don't forget that ten minutes devoted to this work **every morning regularly**, are better than even a whole day once a week.

Thin people have more skin surface exposed, in proportion to the weight, than fat people. For this reason they lose heat more readily. In order to make up this difference they necessarily require more energy foods, such as fats and carbohydrates. Olive oil and butter are among the best of these, since they are least liable to disturb the digestion. Therefore, the thin person should eat plenty of olive oil in his salad dressing and plenty of butter on his bread. Potatoes are also excellent fattening foods, but should be well chewed and tasted before swallowing.

About one-fifth of the entire body weight is composed of fat, therefore, the proportion of fat food required is approximately three-tenths of the total food intake in the case of the average, normal adult. While butter, oatmeal, nuts, milk, legumes, etc., contain fat, yet it is in olive oil that we find it in its purest and most concentrated form. It can be used in the daily menu in various ways, each of which is highly nourishing as well as very palatable.

In both severe acute diseases and chronic wasting diseases, there is considerable tissue waste. Where the general health has been impaired by bad hygienic surroundings, or in cases of children who have been wrongly or insufficiently fed, either by ignorant parents or those too poor to supply proper food for them, as well as in aged persons where the nutritive processes have become less vigorous, what is needed is a sufficient quantity of fatty food, and this can be obtained in the very best form from olive oil.

In cases of tuberculosis, anemia, empyema, rickets, chronic bronchitis and many chronic diseases of the nervous system and skin, it is a very fine food remedy. It is a first-aid food in cases of nervous diseases, brain fag, etc., whether neuralgic pain is present or not. In hyperacidity, olive oil decreases the flow of gastric juice and it will not unduly tax a weak stomach. Where the appetite is too sharp, it may be retarded by taking olive oil at the beginning of the meal. Thus it helps overcome the over-eating habit.

Warding Off Old Age

A MAN reaches the highest point in his trajectory of physical ability somewhere between the ages of thirty-one and thirty-five, although we usually think of "middle-aged" men as those past forty. Yet most men at the age of thirty-five have reached the top of the ladder, physically speaking, and after that they begin to descend on the other side. Mentally, however, the condition is different. Men at that age have greater knowledge and accomplish more with less effort.

While the above is the rule with most men, it is not necessary and should not be so. Men should remain physically fit, even to sixty or seventy. They should be quick, easy of movement and enduring. They should have a strong heart and strong lungs. They should be able to stand the strains and over-strains of business without experiencing ill effects.

To illustrate this point I may quote Walter Camp—for a generation an authority on athletics. Mr. Camp graduated from Yale University in 1880, and at the time of which I write was in his sixtieth year. When the world war broke out he was sent for by the United States Government to overlook the physical training in fifteen naval training stations. Athletics and physical training were a hobby with him. The attention of Congress was later called to the noteworthy results he accomplished.

Quoting Mr. Camp's own story in the *American Magazine*: "At the beginning of the war a group of men here in New Haven found themselves face to face with great responsibilities. Some of them, manufacturers, had taken over huge contracts for the Government; others, professional and business men, became engaged in patriotic labors of various kinds. The demand on the manufacturers, and on the others as well, was that they speed up, and speeding up means late hours and nerve tension.

" 'We'll break down,' they said. 'Give three hours a week,' I replied, 'and you won't.' They gave the three hours a week, and they didn't break down; not a man of them. Not only that, but in spite of the

strain put upon them, their health, and consequently their capacity for work, increased. They had to do what they had done in ordinary times, only more of it. The test put upon them was the test of ordinary times increased fifty per cent.

"Later, in Washington, the heads of Government departments faced the same fear of breakdown that I had found among the business men of New Haven. Before these men were piled up mountains of official work; sometimes committee meetings held them from nine in the morning till twelve at night; and, as usual in Washington, the summer heat was intense. 'We'll break down,' they said. 'Give me four hours a week, and you won't,' I told them.

"Among those who enrolled for the exercises that were to keep them fit were the First Assistant Postmaster General, the Secretary of the Interior, the Secretary of the Treasury, the Attorney General, the Assistant Secretary of the Navy, and the Comptroller of the Currency.

"After a few months of gruelling office work in the enervating heat and under the strain of great responsibility, one of them wrote to me, 'The first of September finds me physically more fit than I was the first of July.' Another one said, 'My only regret is that in these war times of scarcity of food my appetite has increased almost in the same ratio as the cost of living.' And still another declared, 'The paunches are contracting, the smiles of good health expanding all along the line.'

"The interesting thing in this for the average person is that these men did nothing to keep themselves fit which all of us cannot do, and do every day—ten minutes of setting-up exercise, a short walk, and a rub-down before breakfast. As for the walk, it can be taken at any time of the day; and the rub-down is not essential. The exercises were, I believe, the essential thing."

Many of my readers will, no doubt, say to themselves, "I, too, have taken exercises, without equally satisfactory results." True, the great majority of men have, at one time or another in their life, taken exercises in some form. Many practice them spasmodically, as some practice their religion, and get equally unsatisfactory results. Some give them up in despair after one or two trials and say, "There is nothing to them."

To both of these classes I will say, there is **much** to be gained by the right kind of exercises, if you will go at them with the spirit to succeed. There are two things important. You must have the right kind of exercises, and you must enter into them with a determination to win. There must be a spirit of tenaciousness in order to win out in any game that is worthy of the effort.

The set of exercises I have prescribed herewith are positively correct in every detail. That much has been proven in countless cases. They will do for everyone just what is claimed for them, but they must be persisted in for a reasonable length of time. They are not calculated merely to produce a bulging muscle. Their beneficial effects are intended more especially for those parts which are invisible to the eye—the lungs, heart, diaphragm, etc. Just as the automobile engine must be kept well oiled if it is to run smoothly and climb the hills, so must the human engine be lubricated, and correct exercise is one of the best lubricants.

My exercises will cause one to unconsciously and automatically breathe as he should—deeply. They will make deep breathing **habitual**. They will assist him to permanently lift up the cage of the chest and make use of the diaphragm, thereby breathing in the way nature intended he should. When he breathes deeply he gets sufficient oxygen to burn up much waste material. This will assist the abnormally fat man to gradually reduce his burden. It must be reduced gradually, in the same way that nature originally put it on, otherwise, if reduced too suddenly, the heart would have to pay the penalty.

VALUE OF RESERVE FORCE

The difference between a man or woman in perfect, robust health and one who is enjoying only “fair” health is the same as between the person who maintains a substantial checking account in the bank and the one who has none. The former, through intelligent forethought and a practical application of nature’s laws, has stored up a valuable reserve fund of health and vitality which he is able to draw on at will. The latter is continually using up the energy which his body produces from day to day. When the proverbial “rainy day” comes and, on account of sick-

ness or accident, the reserve fund must be drawn upon and there is none on which to draw, the unfortunate one must pay the penalty.

The best checking account that one can possibly maintain in the bank of health is to wisely fortify the body against possible attacks of sickness, epidemics or accident, by adopting right now my splendid system of health culture exercises. These will develop the lungs and muscles, strengthen the diaphragm and stimulate the organs of the body generally to normal action and increase the efficiency and power of resistance. Where there is a constipated condition it is well to also make daily use of my Mechanical Fat Remover for its stimulating effect upon the entire intestinal tract.

STRENGTHENING THE DIAPHRAGM

When the muscles are not used sufficiently a person becomes soft, flabby and weak. This means a loss of tone in the muscles and weakening of the circulation. This flabbiness and weakness is especially regrettable where the internal structures are concerned. The system of muscular exercise which I give herewith has the effect of strengthening and toning up all of the vital organs, namely, the heart, lungs, liver, kidneys, spleen and digestive functions.

It should be borne in mind that the muscles with which we are most intimately acquainted—the leg and back muscles, biceps, etc.—are not the only muscular structures of the body. There are muscles without number throughout the human anatomy. The heart is muscular in its nature. The alimentary canal is largely muscular, and swallowing is a muscular effort. Most important of these muscular structures, however, is the diaphragm. This is a flat, muscular organ, somewhat resembling an inverted shallow bowl.

This important structure separates the chest cavity, containing the heart and lungs, from the abdominal cavity, which encloses the stomach, liver, etc. When we breathe the diaphragm is flattened, so to speak, creating a vacuum in the chest cavity, which action draws air into the lungs. Strength may be cultivated in this important muscular organ as strength may be cultivated in the muscles of the legs and arms.

The first thing necessary is to learn how to breathe correctly. While all of us breathe unconsciously, yet we do not all breathe in the way we should, and as deeply as we should. Correct breathing may be easily cultivated by conscious diaphragmatic exercise. One who takes correct bodily exercise will naturally acquire deep breathing. An excellent exercise to strengthen the muscles of the diaphragm is to pucker the mouth, as for whistling, and vigorously force out the breath through the small opening. The internal muscular effort involved will be readily apparent. By placing the hands on the small of the back, thumbs out, the expansion of the waist line will be readily apparent during proper diaphragmatic breathing.

Health culture, as directed in my set of exercises, does not mean merely increasing muscular strength, but as well the improvement of circulation, and the general building up and toning of all of the vital organs of the body. This will be more readily understood when it is explained that the muscular system is one of the important parts of the human organism, constituting about two-fifths of the body bulk. And when the muscular system is built up to its proper efficiency it exerts a powerfully invigorating and beneficial effect on all of the vital organs of the body.

AIR AND BREATHING

One of the greatest of all blessings, both in health and disease, is good, wholesome, fresh air. And one of the greatest mistakes that it is possible to make is the shutting off of all outside air because it may "cause colds," or cause injury to the sick person.

It must be understood that fresh air is a most important food. As has been aptly stated, "We can live for weeks without solid food, for days without water, but only for a few minutes without air." Correct breathing has a decidedly beneficial effect on the muscular walls of the chest and the diaphragm, which in turn has a beneficial effect on the entire abdominal viscera, bowels, etc. Any method of exercising the diaphragm has a tendency to stimulate the internal organs to renewed activity.

Life depends absolutely upon respiration and we, therefore, depend upon our lungs for the maintenance of our life. And man needs air for his development and for retaining his health, just as every other living animal and every plant needs it. Without air, and without light, disease and death would soon claim us.

Illustrative of the death-dealing effects of impure air, the following instance is cited: “. . . it is stated, with much regret, that in a certain tunnel, notwithstanding every precaution being taken, all the men engaged in driving the drainage heading by means of a tunneling machine have died; and in the case of the first Vyrnwy tunnel crossing the river Mersey—driven by Greathead shield under pressure—the mortality was great.” (The Great Alpine Tunnels, by Francis Fox, M. I. C. E., p. 621.)

We perform the act of breathing—inhaling and exhaling the breath—nearly 29,000 times during each twenty-four hour period. With each breath we take into the lungs about thirty cubic inches of air. Each time we exhale we throw off about the same quantity of foul gas. Now as the blood passes through the lungs it is freed of its poisonous properties and these are expelled with the breath. Thus the lungs are very important organs of elimination.

After the blood has passed through the lungs it has become to a greater or less degree purified. It has undergone certain chemical changes which remove from it the impure properties. Suppose this blood were forced to circulate—even only once or twice—through the system without receiving this purifying effect in the lungs. What would happen? Death would result in an extremely short time—even almost instantaneously.

For example, take the case of a person who is strangled or suffocated. Death does not result merely because the lungs were not allowed to contract and expand and thus fill the air cells. It results because the toxic matter has not been removed from the blood in its passage through the lungs. Thus it is forced back by the circulation, into the system, which it poisons with fatal effect. For this reason the blood of suffocated or strangled persons is almost black, the result of its having been forced back through the system, without purification.

Dr. A. M. Loughney's Scientific System of Health Culture

GENERAL DIRECTIONS

Read following instructions carefully and adhere to them minutely:

1. The entire course should be taken as directed, upon arising in the morning or before retiring at night. Persons troubled with insomnia will find the latter especially beneficial.

2. The exercises should be continued for not less than five nor more than twenty minutes, unless fatigue of the muscles is experienced, when you should cease. Perspiration being healthful should not be allowed to interfere with your work.

3. The movements should not be executed in a jerky manner, but let every action be slow, full, and rhythmical, in order to obtain the best results.

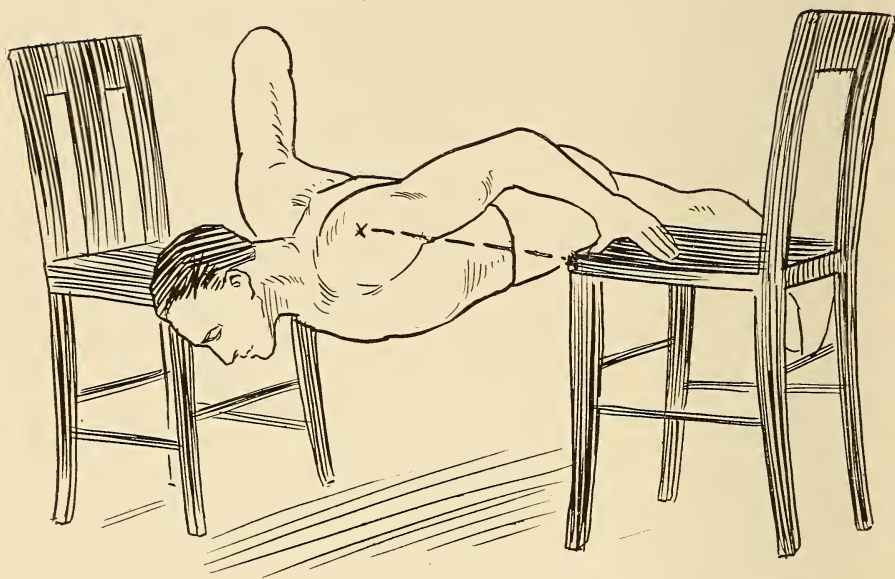
4. Immediately after exercising take a cold bath, either plunge, shower or sponge, (the latter advised if you are not accustomed to the cold bath), but the time of same not to exceed one minute. Rub entire body briskly with a Turkish towel (flesh brush will be found beneficial). The rubbing will assist the general circulation and thereby assure you the best possible results.

5. I must insist that the exercise be indulged in regularly and the directions minutely adhered to. If you do this, I can assure you the results will greatly exceed your most sanguine expectations.

6. The apartments in which you exercise should be well ventilated, (this is an important point to be observed). In exercising always breathe through the nostrils, practicing both slow and deep inhalations and exhalations.

7. You will experience a soreness of the muscles after the first few lessons, but this will gradually disappear as the parts become accustomed to their new duties.

Dr. A. M. Loughney's Scientific System of Health Culture

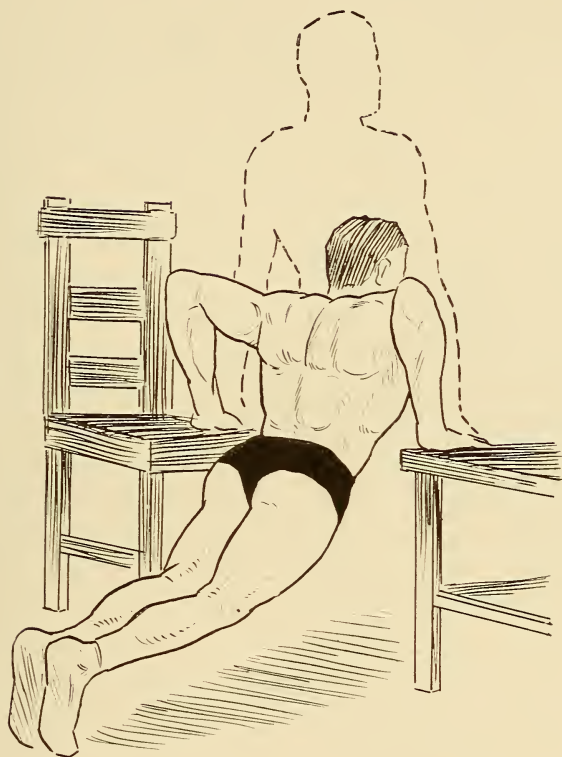


HEALTH CULTURE EXERCISES

Benefits Especially—Chest, Arms, Shoulders, Neck,
Back and Internal Organs.

Place chairs two and one-half feet apart, keep hips high, chest as low as possible; touch shoulder first on one chair and then on the other. Repeat until tired.

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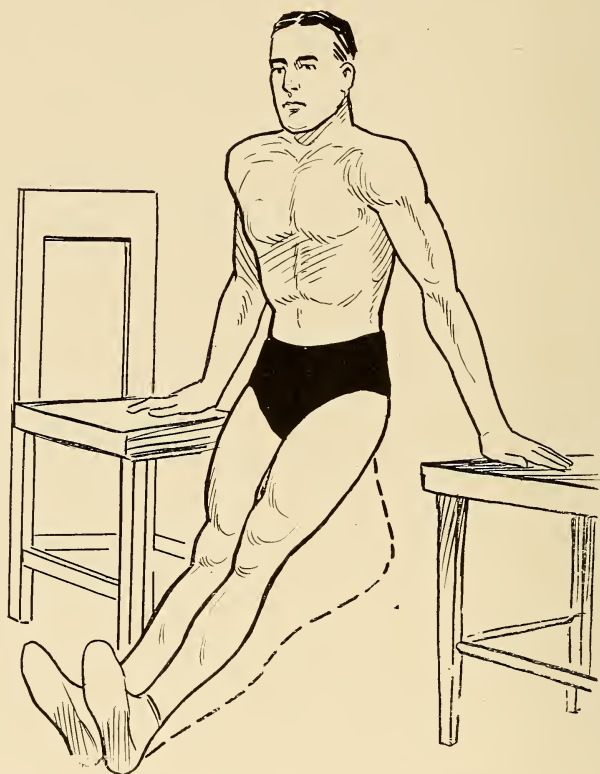


HEALTH CULTURE EXERCISES

Benefits Especially—Shoulders, Arms, Neck, Chest,
Back and Internal Organs.

Assume position as shown in cut, chairs far enough apart to let body down between: keep hips low and raise body to position shown by dotted lines. Repeat until tired.

Dr. A. M. Loughney's Scientific System of Health Culture



HEALTH CULTURE EXERCISES

Benefits Especially—Arms, Chest, Shoulders, Back,
Neck and Internal Organs.

Assume position as shown, chairs just enough apart to allow hips to pass down between; lower and raise body to within one inch of floor, keeping legs straight. Repeat until tired.

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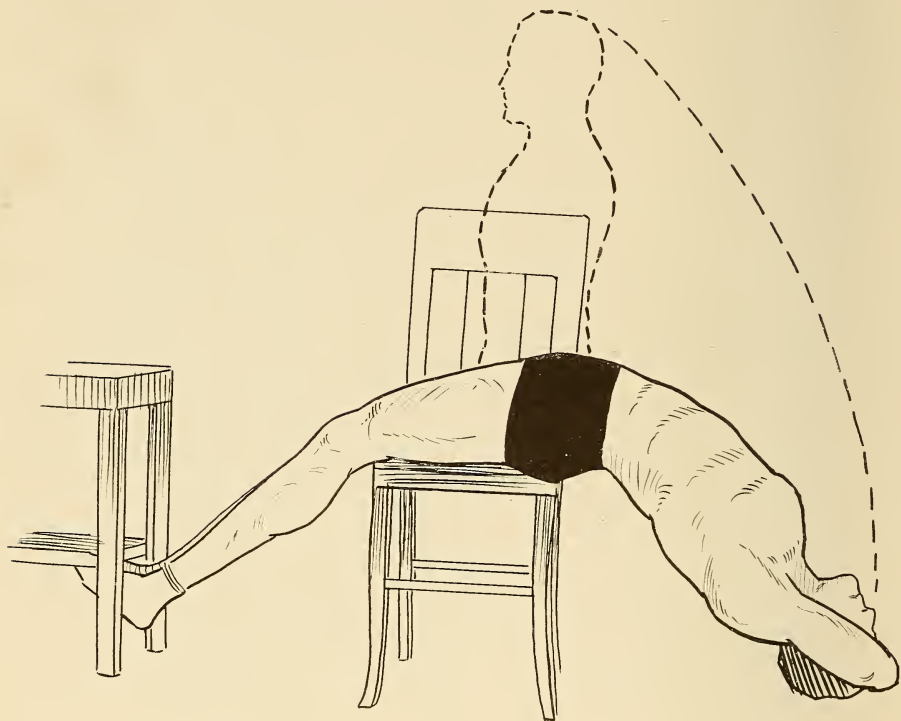


HEALTH CULTURE EXERCISES

Benefits Especially—Chest, Shoulders and
Internal Organs.

Assume position as shown; raise body to dotted lines; lower with a jerk as low as chest will go. Repeat until tired.

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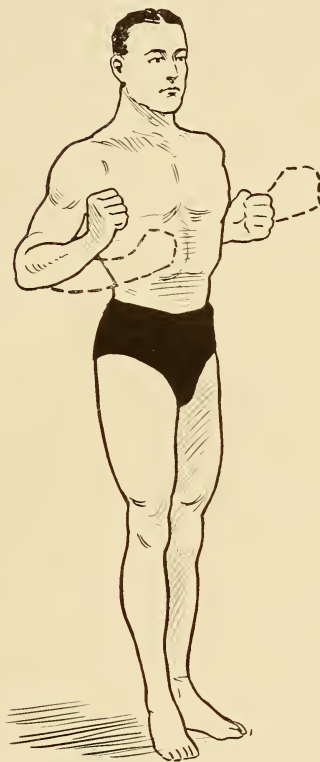


HEALTH CULTURE EXERCISES

Benefits Especially—Stomach, Abdomen, Neck, Chest,
Legs, Back and Internal Organs.

Assume position shown by dotted lines; place feet under table or other heavy obstacle; clasp hands back of neck; bend backward in an effort to touch head to floor, and return to sitting posture. Repeat until tired.

Dr. A. M. Loughney's Scientific System of Health Culture



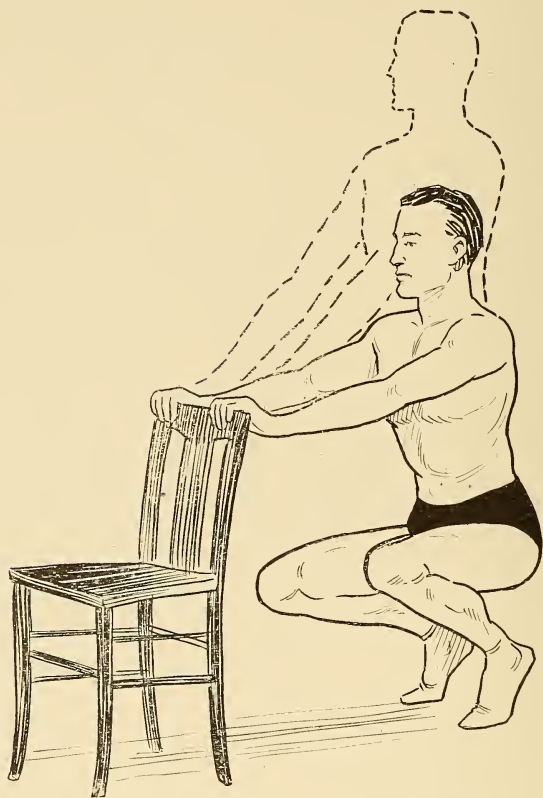
HEALTH CULTURE EXERCISES

Benefits Especially—Lungs, Kidneys, Digestive Organs and Liver.

Creates Vibratory Action in Lungs, and Enlivens Inactive Air Cells.

Erect position, deep inhalation. Retain breath about ten seconds and beat sides lightly and quickly with heels of hands. Repeat ten times.

Dr. A. M. Loughney's Scientific System of Health Culture



HEALTH CULTURE EXERCISES

Benefits Especially—All Muscles in Lower Limbs.

Assume standing position as shown by dotted lines, heels together, feet at angle of 45 degrees; remain on toes and come to position shown and back to original position. Make movements rapid. Repeat until tired.

Since perfect elimination of the poisonous matters is of such vital importance, it will readily be understood how even a partial blocking of this necessary function may cause serious damage to our health. And since about 3,000 cubic feet of wholesome, pure air are needed hourly by every person, if this is not supplied in the home or office by a free circulation through windows or ventilators, it is easy to understand how evil results must necessarily follow. How important then must it be that we secure at all times a liberal quantity of good, pure air, and especially in the case of one who is suffering from disease.

Pure air, containing an abundant supply of oxygen, is without question, one of the most efficient germicides we have. As Florence Nightingale said: "Let no one ever depend upon fumigations, 'disinfectants,' and the like, for purifying the air. The offensive thing, not its smell, must be removed. A celebrated medical lecturer began one day, 'Fumigations, gentlemen, are of essential importance. They make such an abominable smell that they compel you to open the window.' "

Cool, pure air is not harmful and does not in any case aggravate diseased conditions. It is in the act of excluding it from the home, shutting it out from the bedrooms and the sick rooms, that many persons commit most grievous error. Deep breathing of good, pure air is one of nature's most potent weapons against disease of any character; and it is a wise precaution in health, which, if carefully followed, will go far toward furnishing immunity against sickness and suffering.

DEVELOPMENT OF THE CHEST

One's physical status is largely indicated by the development of the chest. A high chest, deep and full, indicates strength and vitality. And usually it is indicative of a well-developed body, possessing strength, endurance and superior resisting powers. The possessor of a full chest can generally be counted on as one who will live long and happily.

In the human frame it is important, in order to insure normal development and health, that the heart and lungs are provided ample room. They must be in no wise cramped or have their action retarded. This

naturally calls for a full chest. And with a full chest, and with heart and lungs performing their functions normally, it is a pretty safe wager that their owner is in a safe way as regards his physical health.

Then there is another consideration—another good reason why a full chest is imperative. It creates a better body posture and insures proper alignment of the spinal column. This is true, because without correct body posture and correct alignment of the spinal column chest expansion is impossible. When the chest is expanded the diaphragm is drawn upward, with consequent upward and inward movement of the liver, stomach and other organs. Thus, instead of being allowed to sag, these organs are brought to their correct supporting position.

It is a simple matter to understand that when these organs are in their correct, normal positions they are in better position to function properly. In fact proper functioning is impossible in the sagging, pro-lapsing state into which they must necessarily fall in the stooped posture, shallow-breathing poise of the person who is indifferent to the health-producing attributes of the full chest.

As the blood is the life stream of the body, so is the spine the life bridge that enables us to safely span the expanse between youth and old age. To safely cross this expanse we must rely upon a strong, safe spine, in order to keep the body in healthy condition. It cannot be kept in a strong, vigorous condition except in its normal, erect position. Displacements and wrong positions of the spine cause impingement of the nerves leading from it to the various organs of the body and their normal functioning is thereby interfered with—in exact proportion to the extent of the impingement.

To insure proper functioning, therefore, we must preserve a straight and flexible spine. Stiffening of this important supporting post must be prevented. And chest expansion is the one greatest preventive. The ribs which form the framework for the chest cavity are attached to the vertebrae and if the ribs have a sufficient range of movement it follows that the vertebrae, being attached to them, will retain a sufficient amount of elasticity, which will insure proper functioning of the organs connected therewith. And, as we all know, proper functioning means health.



FROM FLABBY FLESH TO SOLID MUSCLE



EVERY ORGAN AND TISSUE IS STRENGTHENED

As persons become advanced in years the ribs become more stiffened. The possibility for chest expansion is thereby lessened, which in other words means that the corresponding vertebrae of the spine have become stiffened, or rigid. Everyone, therefore, who would secure the most out of life should give careful attention to daily exercises in chest expansion. This course will not only tend to develop a full, powerful chest that will, in itself prove a pride and satisfaction to its possessor, but will keep the spine in a correct, elastic position that will spell volumes towards one's health, happiness and business and social success.

Therefore, if you have acquired the habit of being a trifle "chesty," do not, by any means, discourage the habit. It's a good thing to cultivate, from a physical standpoint. There is not a man or woman in the world who will not be made better for it, and nothing else will contribute more effectively to man's physical upbuilding and woman's general attractiveness.

EXERCISE FOR WOMEN

The average housewife, when you mention physical exercise to her, will tell you that she gets plenty of that about the house every day, with the broom, the carpet sweeper, making up the beds, and the hundred and one other duties that go to make up her daily routine in keeping the house in order. And while this is true in a certain sense, the work that she performs every day about the house is not providing her just the kind and degree of exercise that are required for the best interests of her physical well being.

It should be understood that there is a fundamental difference between just plain work and exercise. True, certain kinds of work provide ideal exercise. Work carried to a given point tends to build and maintain a given amount of strength. But ordinary housework commonly overtakes certain muscles or groups of muscles, while neglecting others. On the other hand, properly directed exercise brings into play these neglected muscles and corrects any special weakness or defect. Thus, through exercise of the right sort the entire body secures a uniform development of strength and symmetry, which is not possible with work alone.

The set of exercises I have provided in this book are invaluable for every woman, be she housewife, society woman, factory or office worker or saleslady. They will prove most effective for building the body to its correct proportions and developing strength, because they are especially adapted to that purpose. Practiced according to the instructions given, they will be found refreshing and invigorating, toning up the system and giving increased energy instead of consuming it.

The truth of my statement that work alone is not sufficient to produce correct physical development and symmetry of figure in women may be verified every day by noting the countless numbers of women who do plenty of housework and other lines of work, yet they are anything but inspiring examples of physical perfection. If, along with their regular work, they would devote but ten to fifteen minutes each day to these exercises they would, within a reasonable time, find that they had not only gained much in physical appearance, poise and carriage, but would also be in condition whereby their regular routine of work would prove far less fatiguing.

My system of exercise promotes flexibility of the spine and all of the upper parts of the body, raising and expanding the chest and imparting tone and vigor to both internal and external parts. On the contrary, most kinds of work are conducive to bad body posture. Housework, especially, has a tendency to create stiffness and rigidity of all the parts. Most household duties are of a nature to bend the back, cause the shoulders to stoop and cramp the chest, giving one a drooping, worn out appearance. Obviously the way to remedy these conditions is to adopt a set of scientifically correct exercises that will bring the now unused muscles into play.

Correct Eating

CORRECT nutrition, or the problem of eating scientifically, is of the greatest importance; yet it is only during comparatively recent years that this subject has been given much scientific thought. Food investigations and experimentations have been conducted in Europe for the past seventy or eighty years; and in the United States for a considerably shorter period of time. Recently, the developments along this line have been very rapid and much of importance has been learned. The most important of these developments I have endeavored to set forth clearly in this volume.

Science has taught us that the human body is composed of various chemical substances which are very similar to those contained in the foods which nourish it. These change in accordance with man's methods of living, age, environment, etc. Health is represented by a normal proportion of these elements, while disease is induced when their proportions are thrown out of balance. Chemistry reveals there are some fifteen or twenty chemical elements in the human body. Fifteen of the most important of these are proportioned, normally, approximately as follows:

	Pounds	Ounces	Grains
Oxygen	97	12	
Carbon	30		
Hydrogen	11	10	
Nitrogen	2	14	
Calcium .....	.2		
Phosphorus	2	12	190
Sulphur		3	270
Sodium		2	196
Chlorine		2	250
Fluorine			215
Potassium			290
Magnesium			340
Iron			180
Silicon			116
Manganese			90

In the attainment of the highest mental and physical development in man, food is the all-important factor. Nature has supplied in her wide range of food products every element needed for this purpose. By properly regulating the quantity and proportions of food it is not only possible to maintain an existing normal condition of health; it is also within the power of food to effectually cure disease and enable man to rise to a higher level of vitality and prolong his youth.

CHEMICAL ELEMENTS OF FOODS

Since the quantity and proportions of these chemical elements are of the utmost importance in acquiring and maintaining health, it is necessary that we know something of the chemical elements of which the various foods are composed. For convenience I have listed the commonly used foods under four important divisions, embodying carbohydrates, fats, proteids and mineral salts. Each is given in one or more of the groups in which its elements predominate.

CARBOHYDRATES are foods that contain sugar, starch and cellulose. They are found principally in vegetable foods, such as cereal grains, potatoes, etc. Carbohydrates form but a small proportion—less than one per cent—of the body tissues. Cellulose is the fibrous parts of plants, such as wheat bran, etc.

FATS are foods containing carbon, hydrogen and oxygen. They are found chiefly in animal foods, such as meats, butter, fish, etc. They are also abundant in some vegetable products, such as olives, cotton seed, and in some cereals, as for instance, oatmeal and maize, and in various nuts.

PROTEIDS are foods containing the element nitrogen in such combinations as are assimilable in the human body. They are found in the lean and gristle of meat, whites of eggs, gluten of wheat, etc. It forms about eighteen per cent, by weight, of the average body. Proteids are subdivided into albuminoids, gelatinoids and extractives.

MINERAL SALTS (OR ASH) are the organic and readily convertible salts found especially in fresh and green vegetables, and the term does not apply to salts supplied in mineral form. These food ingredients yield

little energy, yet are indispensable to the human body. When food or body material is burned the mineral constituents remain as ash.

Water is one of the most abundant of the compounds in both body and foods. It constitutes more than sixty per cent of the weight of the average human body and is a component part of all tissues. Although water does not yield any energy to the body, and cannot be burned, nevertheless it is an important constituent of our food.

Chemical Elements of Foods

Carbohydrates	Fats	Proteids	Articles rich in Mineral Salts
Wheat	Butter	Egg	Lettuce
Corn	Milk	Milk	Celery
Rye	Cream	Cheese	String Bean
Rice	Cheese	Bean (dried)	Green Pea
Barley	Almond	Pea (dried)	Dandelion
Oats	Pignolia nut	Lentil (dried)	Turnip tops
Tapioca	Walnut	Wheat Bran	Beet tops
Sugar	Peanut	Peanut	Radish tops
Syrup	Pecan	Pignolia nut	Romaine
Honey	Hickory nut	Meat	Watercress
Potatoes (white)	Filbert	Poultry	Wheat Bran
Potatoes (sweet)	Cocoanut	Fish	
Squash	Chocolate		
Pumpkin	Meat		
Banana			
Grape			
Persimmon			
Date			
Fig			
Raisin			
Peanut			
Pignolia nut			
Chestnut			
Chocolate			

The chemical elements of the body are being constantly used up for the purpose of supplying energy, strength, brain power, etc. Constant replacement, therefore, is necessary to maintain a normal (healthy) condition. This replenishment is accomplished through the medium of foods. But in order to supply the elements needed for the specific purposes and in the proportions required, a correct understanding of the chemical nature and effects of various foods is necessary.

DIET SHOULD BE SIMPLE

In order to produce the surest and quickest results from curative eating the diet should be made simple. That is, but few articles should be eaten at a meal—preferably three or four. This is true because each article of food possesses a certain chemistry and will produce a certain known result in the body, when taken singly. Therefore, if simple combinations of food are taken their chemical actions can be foretold.

Very well defined and healthful results are obtained in the human anatomy by combining certain foods in harmonious proportions. And just as surely, are injurious results obtained by combining foods in which the chemical elements are opposed to each other. It is the office of the food scientist to determine which of the combinations are injurious and which in accord with nature.

Life would be impossible without mineral salts, which are contained in the blood and tissues of the body. This, however, does not mean that they must be supplied in the form of minerals. The kind required by the body are obtained from vegetables, fruits, etc., as well as from foods of animal origin, such as milk, eggs, etc. These are organic salts and are necessary in the digestion of other foods. A certain quantity of these salts is indispensable to the human body.

Phosphate of lime is found in cereals and starch foods. This is the substance which builds bone, teeth and cartilage. Young persons need much of this structural material. After the bones, teeth, etc., are fully developed, which occurs after the age of thirty, but comparatively little phosphate of lime is required—only enough to take care of needed repairs.

Extremely aged persons require practically none. For this reason if the consumption of starchy foods and sweets is continued in adult age, in the same proportion as in youth, much stomach and intestinal trouble will result.

From the above we learn that foods must be selected and proportioned in a manner to supply the needed elements at given ages. Furthermore, temperature of the weather, climate and season of the year must be reckoned with. In cold or winter weather we require foods that will supply heat—which means energy. In warm or hot weather we must avoid, in a large measure, the taking of foods which have a heating tendency, because by overheating the blood we lay ourselves liable to heat prostration and other serious consequences.

OVEREATING CAUSE OF DISEASE

Overeating is one of the most prolific causes of disease. A certain quantity of food is necessary to maintain a normal balance of health. If more is taken than the stomach can dispose of (digest), the result will be indigestion, fermentation, sour stomach and superacidity. If, however, the stomach is able to digest the surplus it is transferred to the cells of the body and an obese condition will result. This abnormal flesh accumulates around the heart, lungs, liver, kidneys and other organs, limiting their power. Thus the heart action becomes labored and the power of the lungs to oxidize becomes impaired. Lowered vitality, lessened endurance and impure blood almost invariably fall to the lot of the abnormally fat person.

There is a world of difference between hunger and appetite. Nature's demand for food is hunger; and nature never demands other than necessary or nourishing foods. Appetite is a habit—a condition acquired. Appetites are acquired for drugs, coffee, stimulants and the like. From this it will be seen that appetite is never to be relied upon as a true guide to the elements the body requires. On the contrary, it is nearly always misleading in the extreme.

Great care, therefore, should always be exercised in distinguishing between appetite and hunger, since digestion is regulated in a large meas-

ure by hunger and the foods taken into the stomach must go to the building of energy, tissue, bone, etc. If they are supplied to the stomach in superfluous quantities or in combinations not required, they fail in the purpose nature intended and only serve to clog the digestive organs and intestinal tract. As digestion is the first step in nature's process of making food ready to be supplied to the tissues, the importance of its being eaten in accordance with nature's demands will be readily apparent.

GASTRIC JUICE

Gastric juice, otherwise known as hydrochloric acid, is the substance which nature employs in digesting our foods. So long as the correct quantity and proportion of food is taken, a normal quantity of hydrochloric acid is utilized for this purpose. However, when foods are combined inharmoniously, nature forces into the stomach an excess of hydrochloric acid which produces fermentation. This is nature's method of getting rid of undesirable or injurious substances. And fermentation is the first stage of decomposition.

Hydrochloric acid is an acidulous fluid which is the most important factor in digestion of food; in fact a certain quantity of it is an absolute necessity in digestion. And while its action upon all classes of food is recognized, its most pronounced function is in the digestion of carbohydrates.

So long as we eat only the quantity and combination of foods required by the body a normal quantity of hydrochloric acid is utilized in the stomach. But when we overeat, or eat in unwise proportions, an excess of hydrochloric acid is caused to enter the stomach. This is nature's method of getting rid of the overabundance or undesirable character of the food. The excess of hydrochloric acid in this case will be in proportion to the excess of food, or the extent to which nature's requirement has been violated.

This causes the food to ferment before it is properly dissolved or digested, and in this state it passes out of the stomach and into the intestines, setting up a similar condition of ferment, or acidity, all along

the intestinal tract. This condition of excessive hydrochloric acid is called superacidity, and a comparatively small quantity of food, if improperly proportioned, may by its inharmonious chemical action set up an extremely violent condition of superacidity. Fermentation, intestinal gas, gastritis, gastric catarrh, ulcer of the stomach, belabored heart and lung action, auto-intoxication and a long train of other disorders are the result of superacidity.

Fermentation of food causes gases to be generated in the stomach and intestinal tract. These gases cause distension of the intestines, which in turn gives rise to many distressing symptoms. The tendency is for the gases to accumulate in the transverse colon which in many cases becomes distended to double, and even to three and four times its normal size.

This distension exerts a pressure on the heart and lungs, retarding the action of each. The passage of the blood to and from the heart and lungs becomes greatly handicapped, setting up a condition often diagnosed as heart trouble. However, by adopting correct habits of eating this so-called heart trouble usually disappears.

As before stated, fermentation induces irritation in the stomach and in many cases throughout the entire intestinal tract. Various nervous symptoms, such as insomnia, depression and even insanity develop as a result of this condition, owing to the irritation it sets up in the nerve centers. Auto-intoxication is one of the conditions brought about by food fermentation, the carbohydrate portion of the food being converted into alcohol poison.

NATURE ONLY CURATIVE AGENT

Right at this point I want to impress on my readers that Nature is the only doctor that really cures disease. All that any doctor, remedy, treatment or so-called cure can do is to remove causes. It is impossible to cure by treating symptoms or "effects." Since perhaps 95 per cent of all disease is caused by incorrect eating it is plain that in order to cure it we must first remove the cause. This is accomplished by eating only the

quantity and proportions of food that the system demands. Nature will do the curing, once the cause is removed.

In superacidity the first requirement is to dispense with stimulants, including tea, coffee, liquors, wine, beer and tobacco. Also acid fruits, white bread, refined sugar products, cereal foods (which do not contain the bran of the wheat), pastries, condiments, pickles, etc., should be withheld for the first few days. Take plenty of outdoor exercise and use my Mechanical Fat Remover morning and night to get the bowels functioning properly.

A condition exactly the reverse of superacidity is that of subacidity. Here there is an insufficient flow of hydrochloric acid to the stomach. Subacidity, when of long duration, usually results in anemia, weakness and loss of weight. In treating it the quantity of food should be cut down to less than normal bodily requirements, temporarily. After a short period this plan will usually establish a normal secretion of hydrochloric acid on account of the pronounced natural hunger which it will induce.

The foods recommended in subacidity are fish, fresh vegetables, potatoes, sour milk, succulent vegetables, fruits, berries, whole wheat and other whole grain foods; omitting stimulants, refined flour bread, refined cereals, fat meats, sweets, pastries, pies, etc.

Starchy foods are disposed of by nature in a number of ways. A portion is burned up in the lungs during the process of breathing. Some is volatilized and consumed. When the quantity is too great the surplus passes into the blood and is deposited in the form of crystals along the mucous surfaces of the arteries. This causes rheumatism, gout, stiffness, arterio sclerosis, etc., and in some instances Bright's disease.

ARTERIO SCLEROSIS

In arterio sclerosis the inner coat of the arteries becomes thickened, brought about by changes that take place in the other coats of the arteries. It is a condition most prevalent in old age. It means aging of the tissues. Yet it is not dependent on old age of the patient but may occur in middle life, due to old age of the tissue, and in this case is due to improper liv-



FOODS DEFICIENT IN VITAMINES AND MINERAL SALTS

These foods, while high in caloric value, have, by modern refining processes, been robbed of the vital elements necessary to sustain life. The following table shows their respective values in calories.

	Calories per pound (fuel value)		Calories per pound (fuel value)
White Bread	1,200	Tapioca	1,650
Soda Crackers	1,875	Granulated Sugar	1,750
Cake	1,630	Macaroni	1,645
Polished Rice	1,620	Some Wheat Breakfast Foods	1,680



FOODS RICH IN VITAMINES AND MINERAL SALTS

The caloric value of these foods is quite insignificant, as compared to those in Exhibit A, yet they furnish an abundance of the vital elements that are necessary to sustain life.

	Calories per pound (fuel value)		Calories per pound (fuel value)
Grapes	295	Apples	190
Baked Potatoes	295	Oranges	150
Celery	65	Spinach	95
Lettuce	65	String Beans	170
Cabbage	115	Beet, Turnip and	
Green Corn	440	Radish Tops	slight

ing, notably wrong eating and drinking habits. Some persons have an inherited tendency to this derangement and fall prey to it more easily than others.

Eating to excess, or eating wrong combinations and proportions of foods will increase the arterial pressure and generate in the system toxins from decomposition in the intestines. Stimulants, such as tobacco, liquors, coffee, tea, wines, beer and overindulgences of all kinds will tax the nervous system. All of these are prominent causative factors in the development of this disease.

In the treatment of arterio sclerosis it is obvious that the first thing necessary is to remove the cause. If certain things we eat or drink have brought on the trouble, then these things must be avoided. If it is developed through toxins which have inflamed the lining of the heart and arteries, then whatever is producing this toxin must be dispensed with. The commonest cause of this trouble is overeating of carbohydrates and proteids. In persons of middle life the discontinuance of the causative factors is usually sufficient to arrest the progress of the disease and if persisted in will cause all symptoms to disappear in from one to three years. In old age this method will prolong the life of the person.

RECOMMENDED AND PROHIBITED FOODS

In Cases of Arterio Sclerosis

MAY TAKE

SOUPS. Cereal or vegetable soup or broth; boullion and clear soup.

FISH. Occasionally a very small portion of light white fish, absolutely fresh.

EGGS. Occasionally one, soft-boiled or poached.

CHEESE. Prepared in various ways may be used to take place of meat and fish.

FARINACIOUS. Fried hominy, baked rice, white bread, rye bread, toast, swieback, raisin bread, date bread, macaroni and cheese, thin baking-powder biscuit, gingerbread.

VEGETABLES. Salad greens of all kinds, rhubarb, baked, boiled or fried potatoes, spinach, onions, parsnips, mushrooms, celery, tomatoes, peas, beans.

FRUITS. Oranges, baked apples, nuts.

DESSERTS. Sugar cookies, sponge cake, rice pudding, pumpkin pie, Indian pudding, brown betty, sweet jellies, fruit preserves, ice cream, banana short-cake, honey.

FLUIDS. Tea, coffee, cocoa, buttermilk, fruit juices, whey, a glass of sauterne at dinner.

MUST NOT TAKE

Meats of any kind, fish, except as above ; sometimes necessary to omit eggs and fish entirely ; alcohol.

Bodily temperature is the indicator of health. Normally it remains at 98 to 99 degrees, F. Life is possible only within a range of about ten degrees from this standard. A variation of even two or three degrees would be sufficient to give cause for alarm.

Knowing this it is easy to appreciate the importance of carefully guarding against unduly increasing the body heat, either by unwise eating or drinking, or by over-exertion, especially during hot weather. Bodily temperature may be successfully controlled during any kind of weather by the proper selection and combination of foods and by avoiding alcoholic drinks and other stimulants.

When food is eaten in excess of what is required much energy is wasted in forcing it out again. This energy creates heat, which raises the body temperature ; or if the food is not passed out it goes toward the forming of fat. In either event the result is highly undesirable. .

EVILS OF CONSTIPATION

Constipation is the curse of the civilized world. It is one of the most destructive and prevalent of all the ills to which humankind is heir. To it may be traced a large proportion of physical and mental disorders. Constipation is caused by the congestion of food matter in the intestines,

induced either by over-eating of all foods, or merely by the over-eating of starches or sweets. The use of milk and milk products in wrong quantities, as well as a diet containing an insufficient quantity of roughage will cause constipation.

Tea, coffee, tobacco and stimulating beverages will cause constipation in many persons, while lack of exercise is responsible for it in others. Laxatives and purgative medicines also come in for their share of blame in creating habits of constipation. Food fermentation, caused by an excess of hydrochloric acid in the stomach, is a frequent cause of constipation, although with many persons it causes the reverse condition, diarrhea.

Habitual constipation is a common complaint. The impulse to go to stool if neglected, even for a few minutes, may disappear. This natural instinct, like many other natural instincts, is usually deadened by failure to exercise it. The normal sensitiveness of this important impulse may be easily restored, however, with a little care. An excellent rule is to visit the closet immediately after the noon and evening meals, as faithfully as most persons do after the morning meal, until the reflex is trained to act at those, the most natural times for its action. The occasional (not habitual) use of an enema of warm water, followed always by a second enema of cold water to prevent relaxation, is a temporary expedient that is quite effective.

In treating constipation the usual quantities of food should be much limited. Only breads, cereals, etc., which contain the bran should be used. Sweets, confections, pastries, desserts, sweet beverages, intoxicating drinks, tobacco, coffee, and tea should be avoided. Two tablespoonfuls of wheat bran should be taken with each meal. Plenty of coarse foods, vegetables, fruits and whole grains (to secure roughage) should be eaten, and plenty of water taken with and between meals.

In constipation my Mechanical Fat Remover is of great value. The peristaltic action in the colons (wave-like action which forces the fecal matter through and from the bowels) is gently stimulated by its use. Its tendency is to induce normal, regular bowel action. While recommended primarily as a fat remover, this device is at the same time one of the most valuable aids in overcoming habitual and other forms of constipa-

tion. For this purpose it should be applied with firm pressure over the abdomen, for several minutes after the morning and evening meals, also following the noon meal, if possible.

The usual remedies for constipation—laxatives, cathartics and the like—are strongly advised against. Their effect on the bowels is only temporary and their use must be continued indefinitely, with constantly increased doses, to secure the desired result. And when it is explained that the peristaltic action that they force in the bowels is merely nature's violent attempt to drive out of the system a foreign substance, the fallacy of using physic as a health measure becomes apparent.

The use of my Mechanical Fat Remover tends to induce the peristaltic action in a natural manner, with consequent regularity of this important function. Supplemented by a properly balanced diet, the device provides not only a speedy remedy for constipation, but one that (unlike physic) is permanent. As a constipation remedy alone this remarkable little device is worthy of a place in every home in the land in which there is a tendency toward this affliction. It will save its initial cost many times over within the year, by the saving in doctor bills and bills for medicine. This fact will be better appreciated when it is explained that constipation is directly and indirectly the cause of more sickness than perhaps any other one evil known.

Wheat bran is a valuable remedy in cases of constipation or congestion of the stomach or intestinal tract. Two tablespoonfuls taken with meals is sufficient in most of the worst cases of constipation. It may be taken raw by mixing with water and drinking down quickly, or cooked like cereals, from fifteen to twenty minutes and served with cream or milk. While two tablespoonfuls are sufficient for most persons, it may be taken in larger quantities, up to a pint a day, with good results. After it has accomplished the desired purpose the quantity should be reduced. Children should be given less, according to age.



WHAT YOU NEED IF YOU ARE CONSTIPATED

Apples, oranges, figs, prunes and rhubarb are valuable for their laxative properties and very beneficial in cases of constipation and general sluggishness of the eliminative organs. Wheat bran, lettuce and cabbage are valuable as "roughage," assisting materially in elimination.



A WELL BALANCED MORNING OR EVENING MEAL

Two slices of well toasted whole wheat or graham bread, with one moderate sized cube of butter; any of the seasonable fresh fruits, or an assortment of same (no sugar added) and a glass of water, into which has been squeezed the juice of an orange, will provide a repast fit for a king.

This sort of breakfast will go a long way toward keeping you 100 per cent efficient during the day, and it is the kind of evening meal that you will not experience a sleepless night over.

What Metabolism Is

METABOLISM is nature's process whereby the raw materials that are taken into the body in the form of food, water and air are manufactured into a wonderful variety of new compounds suitable for the use of the body organism, such as acids, alkalis, salts, etc., all fluids necessary to dissolve and carry away the waste products of the body.

All during our lives most remarkable changes are taking place continually within the body, upbuilding and tearing down—nutrition and waste. It is these changes that keep us in a condition of health, or that bring on diseased conditions if the proper balance is upset by wrong eating methods or other wrong living habits.

The substances formed are delivered to all parts of the body, and under the trophic influence of the nerves, they are selected out of the blood stream and then assimilated by the individual cells. The process of upbuilding is called anabolism. The tearing down and carrying away of waste matter is called catabolism. The two processes—the upbuilding and the tearing down—are called metabolism. All of these metabolic processes are under the direct influence of the nervous system.

Within the organism is a complete play of opposing forces. There are the flexor and the extensor muscles; the upbuilding process, the tearing down process; there is the fresh, nutritive supply being carried through the arteries; opposing this there is the carrying away of the waste matter through the veins. There is the intake of food, and the carrying away of the waste. It is the balance of these opposing forces that represents health. When they become unbalanced, a condition conducive of disease takes place.

The chemical manufacturing processes constantly going on in the body maintains the self-sufficiency of the organism. These manufactured products are then supplied to the various parts of the body by the intricate system of blood vessels, while the waste products are carried away. It will, therefore, be plain to my readers that the rational method of main-

taining health, or of treating diseased conditions, is to assist nature to work in the best possible manner by supplying her the kinds and quantities of food she requires for her work, withholding those not required.

This is what the science of curative eating does. It seeks out the primary causes of disease, thereby differing from other systems of curing. The old schools of medicine tell us that certain germs cause certain diseases. For example, that typhoid fever is caused by the bacillus typhosus; that the bacillus tuberculosis is responsible for consumption; that diphtheria is caused by the klebs-loeffler bacillus, etc.

Now it has been clearly established that disease germs cannot exist in healthy tissue. If we are in a proper condition of health, with the various organs of the body functioning as they should, with correct assimilation of the materials taken into the body and proper elimination of the waste, disease germs cannot affect us. Pure, circulating blood is the very best germicide known, and a tissue builder as well.

From this it will be clear that germs are not the real cause of disease. Rather, what causes it is that which permits the tissues of the body to become debilitated, and waste to accumulate to such an extent that the germs can thrive. Therefore, summing it all up, we find that the all-important factor in the life processes—in the maintaining of health or healing of disease—is nutrition. For the chemicals of life lie hidden in the laboratory of the human body, and it has been clearly demonstrated that these are self-sufficient.

WE MUST AVOID OVERNUTRITION

The various foods are taken into the stomach as so much meat, milk, bread, etc., but they are not so received by the organism. There they are received and absorbed into the system as chemical solutions of protein, carbohydrates, fat and salts. Then as this fluid nourishment is distributed throughout the system the various tissues and organs select from it what they require.

If in this manner, all of the necessary elements are supplied to the body, then the nutrition is perfect, unless the building-up power is defi-

cient, in which case no weight can be taken on. The causes of the failure to take on weight multiply. It is a condition of enervation, but the causes of enervation are many, including worry, overeating, excesses, etc. The predisposing cause may be low vital inheritance, having inherited less than full efficiency. In this case it is much harder to secure the result from treatment that will obtain in persons of perfect efficiency.

The arthritic diathesis, those with a constitutional tendency toward rheumatism, should eat lightly if not actively exercising in some manner. The exercise must be in proportion to the food consumed to insure a physical well being. Starch and sugar in too great a quantity will induce rheumatism, tonsilitis, gastritis, etc. Children of this type have an inclination to become overweight and are likely to develop an arthritic disease. As an aftermath of rheumatism they are likely to become afflicted with rheumatic heart complications.

Nature's tendency is toward purification, and but for man's degenerating habits, disease would be unknown. With the discontinuance of overeating and excesses disease would end. We are continually overlooking flooded conditions of metabolism and ignorantly eating nourishing food with a view to keeping up the strength that has already been reduced by overnutrition. Not all doctors look upon tuberculosis and Bright's disease as flooded metabolism. Disease comes from insufficient nourishment according to the judgment of many physicians. A strumous diathesis deprived of its normal resistance is the cause of tuberculosis.

Meat, salad and cooked non-starchy vegetables constitute an ideally arranged meal and contain enough variety for all requirements. There is little danger of overeating on a meal of this kind. But if you substitute potatoes for the salad and then take pudding and pie in addition, you are going to stir up trouble in your digestive organs. If you are young and vigorous it may not bother you much, but when you begin to grow older you are going to feel the effects of it in no uncertain manner. There is even much sickness in early life from the latter plan of eating.

You may ask yourself, "Why do you insist on salads or fresh uncooked fruits at every meal?" Because these are the eliminative foods. They control the fermentation of starch and carry oxygen into the body,

supplying the system with enzymes (vitamines). They supply food elements in their most elementary form. Foods of this nature furnish properties of nutrition that even the weakest digestion can use advantageously, even though failing to get nourishment from more matured foods. If, therefore, you find it impossible to have salads or fresh uncooked fruits at every meal, you should at least have them with each dinner.

Here is a safe diet, and one that is conservative, both in food and in health: For breakfast, fresh, uncooked fruits. For dinner at noon, two or three ounces of meat or fish, fowl or eggs; two succulent vegetables; fruit salad or grapefruit or apples; these every other day. Then, on alternate days, one of the following foods: Irish or sweet potatoes, corn bread, navy or butter beans, rice or whole wheat bread (well toasted), two succulent vegetables and fruit or a salad. For supper, any cereal and fruit or pudding or plain cake, and a glass of milk. On occasional days, when meat is excluded from the dinner, eat nuts, cottage cheese and fruit. Eat enough to satisfy. Should there be discomfort, miss a meal, or as many meals as may be necessary to bring comfort.

If you experience a burning sensation of the stomach a couple of hours after you have eaten, it is proof that you are eating too much. Sufferers from acidity are, as a general thing, eating too much at all meals. In this case, make the breakfasts straight fruit meals, with nothing else. For the evening meals, four to six ounces of well toasted whole wheat or gluten bread, with one small cube of butter. After this has been eaten, care being observed to masticate it thoroughly, an apple or other fresh fruit may be taken; or if in cold weather, two ounces of raisins.

GERMS POWERLESS IN NORMAL BODIES

In order for germs to thrive they must have a suitable soil in which to live. This soil is, naturally, that in which their food is contained. They cannot establish or maintain themselves in a territory which is barren of the food upon which they thrive. If, by chance, they were suddenly deposited in such territory they would be unable to sustain their lives or to propagate their species under the existing conditions.



FOODS PARTICULARLY RECOMMENDED FOR EMACIATED PERSONS

Whole wheat or graham bread, potatoes, butter, cheese, olive oil, milk, nuts, potatoes and meats—the latter used moderately—are some of the most common foods that are valuable for building energy and adding to the weight. Fresh vegetables and fresh fruits supply the elements necessary for healthy blood and for maintaining a well balanced ration.



FOODS DECIDEDLY FAT-FORMING

Carbohydrates (starch and sugar) and the more soluble forms of proteids are among the foods most conducive to obesity. The group of foods shown above, while not intended as a complete list, yet includes some of the most common things which contribute to the fat person's excess burden, including pie, cake, doughnuts, preserves, sugar, fat meats, white bread, butter, cheese, cream, olive oil and sweetened drinks.

The point I wish to make is this: So long as the human body maintains a normal, healthy state this material necessary for germs is lacking. There is no food for them. They cannot grow or flourish, cannot live, on such soil. Their life and growth is rendered possible only in cases of ill health. If the human body is in a normal state, no germs can possibly harm it; for, even though they were allowed to enter the body they would find nothing on which to thrive, consequently must die of starvation.

There is little doubt that we are every day in the year eating, drinking and breathing thousands, perhaps millions, of germs of typhoid, cholera, tuberculosis, and what not. It is impossible to keep them out of our body. But if our bodies are healthy there is no soil, or food, on which they can thrive, hence they are powerless against us. That is why we do not contract these diseases or any of the numberless other diseases that are supposed to be caused by germs. The principle involved is—that so long as we keep our bodies healthy by proper living and especially by the correct selection and proportions of food, we are rendered immune, not only against germ diseases, but as well, against all other ailments to which humankind is susceptible.

Since healthy tissue, therefore, cannot be utilized by germs, it follows that we are only in danger of their ravages when we have allowed impure, effete material to accumulate within our systems. Quoting Dr. Rosenbach: “What we call pre-disposition to infection is nothing but the capacity for furnishing a suitable soil; absence of this tendency points to an unfavorable condition of the nutritive soil.” Germ diseases, therefore, resolve themselves not into conditions caused by the presence of certain specific germs, but rather, conditions of the organisms that render possible, within them, the growth of these particular germs.

For example, cholera is not caused by the germs to which it is generally attributed. It is, in reality, a condition of the body and intestines that renders the life and propagation of these germs possible. The soil—the real cause of the cholera—is there before the entrance of the germs and their presence in this soil causes the disturbances recognized as the symptoms of cholera. The presence of the germs in this case is merely

coincidental. The only way in which we can effect a cure of the disease is to remove the soil—take away the food on which the germs survive. Hence the folly of trying to kill the germs with germicides, etc., which cannot effect a real cure.

As Dr. Walter says: "The nourishment of the germs is not the patient's blood, but the organic materials in the blood which obstruct circulation and nutrition because they cannot be assimilated by the patient. Give the liver, bowels, kidneys, skin, opportunities to gather out of the system these impurities, and the germs soon starve."

Since it is universally acknowledged that germs feed and thrive on effete material in the body, and that they cannot exist in any other manner, the object in the curing of disease must be the elimination of this objectionable matter. And, as germs feed upon this effete matter and assist in its elimination they are, therefore, aids to us in ridding the system of this impure material. We accordingly recover from the disease largely on account of their presence, and not in spite of them, as has always been supposed.

The body may be likened to a "factory of poisons." It is only because of the fact that these poisons are being continually eliminated from the body that we do not become fatally poisoned. As an illustration, consider the cases of death from suffocation, i. e., consequent upon strangulation. It is not the want of air that kills the person, but the fact that, once the action of the lungs ceases, the carbon dioxide normally exhaled at each breath, accumulates within the system, and death results from this poison. The blood of the person thus strangled is nearly black, due to absence of oxygen.

Thus, we would quickly die if our depurating organs were not continuously at work, for a tremendous quantity of poison is being constantly taken into the circulation and eliminated. Bouchard tells us: "If the secretion of urine ceases for about fifty hours, sufficient waste materials and poisons (made in the body) will accumulate to cause death." Kuhne says: "The one common cause of all disease is the presence of foreign substances in the body."

MISCONCEPTION REGARDING CALORIES

There is a great deal of popular misconception regarding the calorie theory. The calorie is a unit of measurement, bearing to heat about the same relation that the inch mark does to the tapeline, or that the pound mark does to a grocer's scale. To make the explanation quite simple, if twenty drops of water (one gram) are heated sufficiently that their temperature rises one degree, the amount of heat required is known as a calorie.

Expressed in the relation of heat to energy, one calorie of heat as produced in an engine would provide sufficient energy to lift three pounds of weight a distance of one foot against the force of gravity. There is an apparatus known as the bomb calorimeter, used by scientists, in which they burn up butter, olive oil, white bread and other combustible matter in order to determine its caloric value. This is all very fine as a scientific theory, but as the caloric principle is now so generally applied to man's food requirements it is not only ridiculous, but positively dangerous.

A great many of the so-called authorities on scientific eating reason that since the energy required for the body can only be supplied from foods, the article of diet that is capable of sending the mercury of the calorimeter's thermometer soaring to the highest point is necessarily the one that is fullest of possibilities as a source of bodily energy. In this, however, they have overlooked one of the vital considerations, namely, that upon the condition of the body depends the power of burning the food in order to produce certain calories; that, furthermore, most of the heat resulting from the burning of food in the body is utilized to maintain normal bodily temperature, and where the health is abnormal through improper nutrition, no matter how great the number of calories, they avail nothing.

Of equal importance is the fact that many so-called eating experts completely lose sight of the principle that some of the most worthless of foods, from a standpoint of life-sustaining properties, are possessed of the highest caloric value. For calories have nothing to do with the iron that puts the red coloring matter into the blood; they have no part in

supplying manganese, the oxidizing agent that is associated with the iron of the blood.

Furthermore, calories have no part in supplying the protecting shell—fluorides—around the bone structure of the teeth, or providing the bone structure with calcium and phosphorus. Calories do not preserve the normal alkilinity of the blood. They do not neutralize the acidity of the tissues. Calories do not act as a substitute for magnesium, sodium or sulphur in the body, and they cannot take the place of potassium or other mineral salts and colloids that assist in assimilation and elimination.

In spite of the nicely prepared tables of caloric values furnished by these same experts, the fact remains that no food can possibly supply its calories according to the prepared schedule unless the organs of the body are functioning properly. No food, regardless of its rated caloric value, is burned in a dead body. Consideration is not taken of the essential substances, so necessary to life—the salts, enzymes, colloids, ferments, etc., and the fact that in the modern processes of food refining these very essentials are completely taken out, without detracting from the caloric value of the portion that is left.

Thus they ignore the health-giving and life-sustaining properties of foods which have no appreciable caloric value, yet are indispensable to the regulation of the specific gravity of the blood; to the regulation of the chemical reaction of all the internal secretions; to the preservation of the tissues of the body from disorganization and decomposition; to the ability of the blood to hold certain materials in solution and to the composition of the solid structure of the body.

The ash content which is present in foods is removed by bolting, sifting, polishing, scouring, desicating and refining. Thus is discarded the very salts upon which life depends, the vitamins which control growth and development and the properties which give to the body in health its natural immunity to disease. The calorie is not anywhere found among these substances.

The proteins, carbohydrates (starches and sugars) and fats, including the compounds known as lecithins, the phosphorized fats, palmitin,

olein or stearine, are all found in foods and are parts of the food. Yet the caloric value is not found in foods nor is it a part of food.

Animals die when fed on refined foods, even though these foods have a caloric value, per pound, measured in the thousands. Such foods are corn starch, granulated sugar, corn grits and flakes, corn syrup, cream of wheat, polished rice, tapioca, macaroni, white flour, puffed rice, etc. If, however, fresh vegetable juices are added to these foods the animals will live, but will not retain normal weight, strength or resistance to disease. They cannot attain perfect health until they are fed on unrefined foods, which include the whole grains or the leaves of plants, lettuce, cabbage, celery tops, etc., which latter, by the way, are extremely low in calories.

Most important discoveries have been made by Dr. McCollum of Johns Hopkins University, which show that there exists in milk, and in grasses and their seeds, two unknown substances which have no caloric value, yet which control and stimulate the growth and development of children and contribute to the vitality of adults. Of these substances, one is found in the fat of the food and the other in its juice. Their chemical character has not been determined and they have never been separated from the food materials with which they are associated.

McCollum has shown that these substances are most abundantly found in spinach, lettuce, cabbage, cauliflower and milk. In all of these the caloric value is very low. McCollum, Osborne and Mendell have shown that remarkable growth is promoted by the feeding of whole milk and butter fat. They have further proved that no matter how high the caloric value of the food may be, if these substances, which have practically no caloric value, are not included, the animal will be stunted in its growth and its health impaired.

The World's Greatest Diet Lesson

A STRIKING example of the evils of an unbalanced diet was brought to public attention in 1918 by Alfred W. McCann, the noted food expert, through the columns of Physical Culture. Mr. McCann has perhaps given more study to the causes of malnutrition and addressed more physicians on the subject than any other man in America.

The story pertained to the peculiar case of the crew of the converted cruiser-raider, Kron Prinz Wilhelm, used by the German government during the world war of 1914-1918. Their strange experiences stand without parallel in the history of the world as practical evidence of the harmful effects of wrong eating. The story, in part, follows:

The Germans brought to the shores of America a poison squad, the first real poison squad of history. There never was a poison squad like it. There probably will never be another. All the so-called scientific short-time feeding experiments, and all their misleading results were put to shame by the experience of the kaiser's sailors.

The Kron Prinz Wilhelm from August, 1914, to April, 1915, was operating as a raider in the service of the German government. During a period of two hundred and fifty-five days it sank fourteen British and French vessels. During this raiding tour it had touched no port and its crew had subsisted on supplies taken from these vessels before they were bombed and sunk.

Principal among the foodstuffs captured in this way were meats, white flour, butter, canned vegetables, coffee, tea, soda crackers, tea biscuits, sweet crackers, potatoes, dried peas, champagne, sugar, oleo, salt fish and lard. Cargoes of whole wheat captured were sent to the bottom, although the germ and bran of this wheat would have been worth its weight in gold to the unfortunate crew in the serious predicament in which they later found themselves.

As has been stated, the raider's crew had depended entirely upon these provisions for its sustenance. In February, 1915, after about six

months of this diet some of the crew began to complain of swollen ankles and pains in the nerves of the legs below the knees. On March 25, fifty of the men were acting queerly and none of them feeling too vigorous. Yet no heed was paid to the fact that there is a balance of acid and base forming elements in the ash content of all food; or that after a diet of refined food a mild chronic acidosis is set up, which abstracts the lime salts from the fibrous tissues, muscles, nerves, cartilages and bones.

When the limbs of the German sailors began to swell they did not know that the swelling was due to the abstraction of these lime salts, with the increased vascularity which follows. They did not heed the fact that loss of lime salts causes irritability and weakness of the muscles, with neuralgic pains. They did not know that the continued loss of lime salts causes effusion into the joints. They did not know that the abstraction of lime salts is the cause of the rapid progress of tuberculosis. They simply continued to raid as long as any strength remained in their fanatical bodies.

Alarming conditions had developed by March 27, the day on which they sank the British steamer, *Coleby*, and sent her cargo of precious wheat to the bottom. Typical symptoms of paralysis, dilated heart, atrophy of the muscles and pain on pressure over nerves, with anemia, were marked. The crew was now dropping at the rate of two a day. Fifty of the men could not stand on their feet. It seemed that a curse had descended on the raider and it was plain that the whole crew was rapidly going to pieces.

It now became plainly evident that the *Kron Prinz Wilhelm* would have to make a run for it to the nearest port or be manned by five hundred dead bodies within the next few weeks. She accordingly made for the James river, off Newport News, Va., where she was discovered lying at anchor on April 11, 1915, a floating wreck, a hospital ship, a lesson to the American experts who cry beri-beri and polished rice, when red meat and white bread are the real issues.

When she put into Newport News, one hundred and ten of her crew of five hundred were prostrated with a disease which the doctors called

beri-beri. The others were on the verge of prostration. Throughout the United States was spread the report that the sailors were the victims of eating polished rice. Government experts, state experts, specialists in private practice and great numbers of eminent health officers and physicians hastened to the ship to hold consultation over the curious disease with which she was afflicted. They all pronounced it beri-beri, and they all insisted it was caused by eating polished rice.

The medical magazines had been filled with discussions of beri-beri; always associating the disease with a diet of polished rice. Beri-beri and polished rice had become "scientific twins." It had become orthodox to think of them together, hence the opinion of the experts was safe enough to satisfy the world.

Of course there really is a disease called beri-beri that is caused from polished rice. But there is no connecting link between the acidosis of the Kron Prinz Wilhelm and the beri-beri of Bilibid prison. Here was a crew of men living in the open air and eating the staple articles of diet for which the American scientists claim so much. Fresh meat, all the butter and cheese they could eat, boiled potatoes, canned vegetables, condensed milk, tons of fancy cakes and biscuits and all the coffee and tea they could drink. And this dreadful condition was brought about in a period of two hundred and fifty-five days on an American diet.

Why do not Americans develop the same conditions? They do, but they eat many other offsetting foods, which were outside the reach of the German sailors, and the severity of the conditions is modified accordingly.

On the Kron Prinz Wilhelm the intensity of the cause determined the gravity of the effect. There was no outside assistance in the form of offsetting fresh vegetables and fruits or whole grain food to lessen the intensity. The canned vegetables consumed, although theoretically contributing base-forming elements, were consumed in comparatively small quantities. Their juices contaminated to some extent with salts of tin or sheet iron, acted possibly as an irritant to the kidneys, already taxed beyond their capacity with excess quantities of sulphuric, phosphoric and

ameno acids, elaborated in the digestion of high protein and refined carbohydrate foods.

Americans, before the war, as far as they could afford, ate more or less generously of onions, lettuce, asparagus, cabbage, carrots, parsnips, cauliflower, Brussels sprouts, celery, apples, berries, oranges, grapes and other base forming foods, all of which assist nature to combat or to modify some of the evil effects of the refined diet on which the Germans attempted to thrive for a long period.

Persons who persist in a refined diet, depriving themselves of these necessary offsetting bases, lay themselves liable to tuberculosis, pneumonia, appendicitis, measles, meningitis, constipation and cancer. It does not pile up its woes in a heap, as was done on the German cruiser. It spreads them out thinly over a larger area and provokes many preventable ills.

The Kron Prinz Wilhelm's experience has proved almost conclusively the inadequacies of the very foods on which America relies so heavily for the protection of her so-called middle and lower classes. No prolonged experience has ever been conducted to determine the evil results of living exclusively on such foods. The Kron Prinz Wilhelm furnished that experiment. There can be no greater or more picturesque proof of the folly of unbalancing food by refinement; of the folly of ignoring the meaning of the salts, colloids and vitamins natural to all unprocessed foods; of the folly of claiming for high caloric foods the absurd virtues which they do not possess.

On April 16, 1915, Mr. McCann secured admittance to the private consultation of a dozen doctors and officers aboard the ship, who were discussing the queer malady, its cause and its possible remedy. "Surely it is beri-beri," they were saying, "but how does beri-beri differ from pellagra, and how does pellagra differ from scurvy, and how does scurvy differ from neuritis, and how does neuritis differ from pernicious anemia, and why is the disease not scurvy instead of beri-beri, and why is it not pellagra instead of either?" and so on and so on.

Although, as previously stated, the report had been spread that the sailors were the victims of beri-beri caused by eating polished rice, it was not polished rice that was responsible for the pathetic condition of the crew, for the reason that polished rice never appeared oftener than once in twenty-one meals. But what did the men eat?

Fresh meat, bread and oleo and boiled potatoes are generally assumed to be life-sustaining foods. The Germans had unwittingly commenced to explode that theory. The raids never resulted in any large quantity of fresh vegetables or fruits. If such fresh vegetables and fruits as were confiscated had been divided among the crew they would not have sufficed for more than one day. In consequence they were reserved for the officers' table, which they managed to provide with fair quantities from one raid to another. All the officers showed symptoms of anemia and mild acidosis, but none of them were prostrated. From their tissues and blood the lime, iron and potassium had not been robbed to the degree suffered by the tissues and blood of the men.

The chart which follows shows what each meal had consisted of on board the Kron Prinz Wilhelm, prior to the breaking out of the disease that caused the collapse of so many of the crew, and was taking off the others at a rate which promised that the entire crew would be down in two weeks more:

MONDAY

Breakfast

Cheese, oatmeal, condensed milk, white bread, butter (oleo), coffee, sugar.

Dinner

Pea soup, canned vegetables served in juice that stood in cans, roast beef, boiled potatoes, white bread, coffee, condensed milk, sugar.

TUESDAY

Breakfast

Sausage, white bread, butter (oleo), fried potatoes, coffee, condensed milk, sugar.

Dinner

Potato soup, canned vegetables served in juice that stood in cans, pot roast of beef, boiled potatoes, white bread, butter, coffee, condensed milk, sugar.

WEDNESDAY**Breakfast**

Corned beef, white bread, butter (oleo), fried potatoes, coffee, condensed milk, sugar.

Dinner

Beef soup, roast beef, boiled potatoes, white bread, butter (oleo), coffee, condensed milk, sugar.

THURSDAY**Breakfast**

Smoked ham, cheese, white bread, butter (oleo), coffee, condensed milk, sugar.

Dinner

Lentil soup, fried steak, fried potatoes, white bread, butter (oleo), coffee, condensed milk, sugar.

FRIDAY**Breakfast**

Boiled rice, cheese, white bread, butter (oleo), fried beef, coffee, condensed milk, sugar.

Dinner

Pea soup, salt fish and pot roast, boiled potatoes, canned vegetables served in juice that stood in the cans, white bread, butter (oleo), coffee, condensed milk, sugar.

Says Mr. McCann:

“Summing up the experience of the Kron Prinz Wilhelm prior to her appearance in the James river, Dr. Perrenon said, ‘We had many cases of pneumonia, pleurisy and rheumatism among the men. They seemed to lose all resistance long before the epidemic broke out. We had superficial wounds, cuts, to deal with. They usually refused to heal for a long

SATURDAY**Breakfast**

Corned beef, cheese, fried potatoes, white bread, butter (oleo), coffee, condensed milk, sugar.

Dinner

Potato soup, roast beef, boiled potatoes, white bread, butter (oleo), coffee, condensed milk, sugar.

SUNDAY**Breakfast**

Beef stew, cheese, fried potatoes, white bread, butter (oleo), coffee, condensed milk, sugar.

Dinner

Beef soup, pot roast, canned vegetables served in juice that stood in the cans, boiled potatoes, white bread, butter (oleo), condensed milk, coffee, sugar.

At 4 o'clock every afternoon the men were served with a plate of Huntley & Palmer's fancy biscuits or sweet cakes with coffee, condensed milk and sugar.

Supper

Evening meal consisted either of fried steak, cold roast beef, corned beef hash, beef stew with potatoes or cold roast beef with white bread, butter (oleo), coffee, condensed milk and sugar.

time. We had much hemorrhage. There were a number of accidents aboard, fractures, and dislocations. The broken bones were slow to mend. Nature was not doing her duty. Food is indeed the cause of much disease.' . . . Like most of us, these sailors were the victims of habit and were reluctant to change their custom. None of them realized that the secondary consequences of acidosis, even of its milder forms, are more dangerous than nervous prostration, neuritis, edema, beri-beri, or whatsoever other term is employed to describe malnutrition. None of them cared a sailor's knot about the function performed by the alkaline salts necessary to neutralize the acid end-products of a meat and white flour diet.

"They were not interested in the fact that meat as dressed for human consumption is stripped of its bones and drained of its blood, and therefore does not furnish the alkaline substances upon which the normal alkalinity of the internal secretions depends. They were not worried about the fact that in the ordinary meat-containing diet, man to some extent offsets the acidosis that follows such diet by consuming milk, egg yolks, celery, lettuce, spinach, carrots, parsnips, beets, cauliflower, onions, string beans, asparagus, apples, oranges, berries, and other fruits and vegetables.

"They were not interested in the fact that acidosis, even of the mildest type, is the forerunner of tuberculosis and other diseases, which follow in the wake of lowered vitality. They were too busy sinking ships to bother with the fact that acidosis is the most relentless calcium destroyer now engaged in breaking down human tissue. They had never heard of Scandola, who has demonstrated that nothing promotes the elimination and loss of calcium more than the use of decalcified foods, such as white bread, degerminated corn, sugar and meat.

"To them the work of Drennan, indicating that the withdrawal of calcium may cause a fatty infiltration and fatty degeneration of the liver cells, meant nothing. They had too much to do to worry over the proofs that where the calcium supply of the blood is diminished the blood will not coagulate on demand, and that after a diet deficient in calcium post-

Old October

James Whitcombe Riley's
version:

"Can't tell what it is about
Old October knocks me out!—
I sleep well enough at night—
And the blamedest appetite
Ever mortal man possessed,—
Last thing et, it tastes the best!—
Walnuts, butternuts, paw paws.
'Iles and limbers up my jaws
Fer raal service, sich es new
Pork, spareribs, and sausage, too.—
Yit, fer all, they's somepin' 'bout
Old October knocks me out!"





Old October

Dr. A. M. Loughney's
version:

Now I've found out all about
Pesky thing 'at knocked me out!—
I'm so happy I could sing,
Dance, 'n shout, 'n everything.
'Twa'n't weather, damp or chill—
But wrong eatin', made me ill!
Vitamines 'n ash contents,
Used to say, "They're all nonsense!"
Now I eat a balanced meal,
Can't explain how good I feel.—
'Twa'n't October knocked me out;
Not at all—'twas just plain gout.

mortem examination shows hemorrhages even in the long bones, thus revealing the hidden ravages that progress unseen until too late to be averted.

“They were eating foods not only deficient in calcium but deficient in the other mineral salts that accompany calcium, but they had no thought of the fact that where the mother is deprived of a sufficiency of calcium foods the fetus is handicapped by lime deficiency, its bones do not grow properly, its teeth do not erupt normally, and later they quickly decay. . . . With Dr. Perrenon, the ship’s surgeon, I went over all these points, and many more, treating them in detail. I did not suggest to him that it was beri-beri, which had so tragically affected his men, for the reason that the cure for beri-beri, pellagra, acidosis, nephritis, edema and scurvy is the same. It consists in restoring by unrefined foods to the sapped body the bases stolen from it.

“Dr. Perrenon asked me to write a formula for feeding his stricken men. I did so. From him I received the following response in writing:

“‘With respect to the disease we have on board we are satisfied now that this condition is due to the impoverished character of our food supply. The remedy you have suggested is obviously the correct one and I shall immediately order its application. I shall read your monograph studiously.

“ ‘E. PERRENON, Chief Surgeon,
S. S. Kron Prinz Wilhelm.’ ”

The formulæ prepared by Mr. McCann, and which was followed by the ship’s chief surgeon, was as follows: To one hundred pounds of wheat bran add two hundred pounds of water. Leach for twelve hours at one hundred and twenty degrees Fahrenheit. Drain off liquor. Give each man eight ounces each morning. Give each man one teaspoonful wheat bran, morning and night, until contraindicated by loose stools. Boil cabbage, carrots, parsnips, spinach, onions, turnips together two hours. Drain off liquor. Discard residue. Feed liquor as soup in generous quantities with unbuttered whole wheat bread. Wash and peel potatoes. Discard potatoes. Retain the skins. Boil skins and give liquor to men to

drink, four ounces a day. Give to each man yolks of four eggs a day in fresh, sweet, unskimmed milk, one yolk every three hours, with as much milk as he will drink by sipping. At noon, with dry whole wheat bread, give one ounce fresh roast beef, for the psychological effect upon the men who have been taught to believe that without meat they cannot live. One hour before drinking give juice of ripe oranges or lemon juice, diluted with water, without sugar, to each man. Keep apples or apple sauce within reach of the men all the time. At the end of first week let the men eat solids of vegetable soup, as well as liquor. It is imperative that the men shall avoid all cheese, whites of eggs, lard, fat of any kind, white bread, crackers, pastry, puddings, mashed potatoes, sugar, saccharine, salt meat, fish, polished rice, pearly barley, degerminated corn meal and gravy (acid-forming foods.)

The sailors of the Kron Prinz Wilhelm established with considerable precision the fact that two hundred and fifty-five days constitute approximately the maximum length of life on a diet of demineralized or decalcified food, which results from the modern methods of processing or refining, and which not only involves the loss of calcium, but the loss of all other "ash" constituents of normal food, such as potassium, iron, magnesium, silicone, fluorine, iodine, etc., and the other substances known as fat soluble "A" and water soluble "B" (vitamines) found in leaves and grasses, and the germ or fat containing substances of cereals, each of which performs a function in the economy of nutrition no less picturesque or important than the role played by calcium.

The results obtained from this seemingly peculiar diet are told by Mr. McCann as follows:

"It was certain that if removed from the German cruiser to a hospital and subjected to the conventional hospital treatment, including tea, white toast, white bread, butter, cornstarch pudding, farina, cream of wheat, mashed potatoes and chops, all of the victims of the Kron Prinz Wilhelm would have been doomed to tuberculosis, if tuberculosis had not already taken possession of them. Their only hope of complete restoration to health, which meant complete repair of all the damage already

done, and a return of nutritional immunity against disease, lay in a prolonged diet of food containing an excess of base-forming elements and a deficiency of acid-forming elements.

"This was the idea that was responsible for the construction of the 'crazy' dietetic treatment which I was permitted to suggest to the ship's surgeon, and which he applied with results that speak for themselves. It was clear that the tissues of the stricken men hungered for alkalines of vegetable origin, and that these alkalines had to be supplied. It was also clear that there was no better way of supplying them than by saturating the tissues with fluids containing them in solution. All the foods proposed, particularly the vegetable liquors, were rich in alkaline salts. That is why the potato-skins were employed.

"I was convinced, and Dr. Perrenon agreed with me, that inasmuch as the men had failed to respond to every other treatment, it would have been wrong to withhold the alkaline treatment, even though it might be laughed at in high places. We know that April 11, 1915, the stricken men aboard the cruiser numbered one hundred and ten. April 12, two new cases were reported. April 13, one new case was reported. April 14, four new cases were reported. April 15, three new cases were reported. April 16, the men began to be saturated with soluble alkalines of vegetable origin, in order to neutralize as quickly as possible the acidity of their internal secretions, and the toxins which were poisoning them.

"April 17, 1915, no new cases were reported, and Dr. Perrenon expressed great confidence in the treatment. April 18, no new cases were reported. Many of the more recent cases manifested marked improvement. In eighteen cases the swelling in the ankles subsided, and in a number of cases it was marked that the pain on pressure over the nerves was not so acute. April 19, four men were so much improved that Dr. Perrenon permitted them to go on deck. Many others showed signs of improvement. April 20, fourteen men were able to leave the ship's hospital, and return to their own bunks. Dr. Perrenon said, 'The effects of the new treatment are remarkable.'

"April 21, eight men were dismissed from the ship's hospital. April 22, eight more were dismissed. April 23, four more were so much im-

proved as to be pronounced out of danger. April 24, seven more cases were dismissed from the hospital, and one of the completely paralyzed victims could stand on his feet without help. Ten days had passed and forty-seven men were so far advanced toward recovery that Dr. Perrenon said, 'We can safely say they are cured.'

"Dr. Perrenon escorted me on the tenth day to one of the worst cases, that of a sailor who spoke English well. He was the second man aboard to collapse, going down in January, 1915. After a diet from the officers' table he recovered until February 23, when he again went down. When I visited the ship for the first time Dr. Perrenon thought the man might die. When I saw him on the tenth day he said, 'I have had three days without pain. I am now hoping to be well.'

"I examined him with Dr. Perrenon. The swelling had subsided in his legs, but the pain still existed when pressure was applied. His condition was indeed pathetic. 'You know you owe this to white bread and meat,' I said to him. 'Yes,' he answered, 'my case is the worst, but the other cases are bad enough. We all owe it to white bread and meat, but there will be no more such food in the German navy when they know what happened to us. They will profit by this, all of them.' . . . At 5:30 p. m., Saturday, April 24, 1915, Dr. Perrenon was ordered by his superiors to repress all facts concerning the conditions aboard the vessel. He would not admit that Bernstorff issued the orders but I was led to believe as much.

"I left Newport News at once for Washington, where I reported to Congressman Walter M. Chandler, who escorted me immediately to the headquarters of Surgeon-General Blue. 'Apart from all considerations of public policy or official recognition of unofficial but well corroborated facts,' said the congressman, 'there is an element in this Kron Prinz Wilhelm situation which demands the recognition of this government and the profound attention of its experts.'

"Surgeon-General Blue, after learning in detail the facts reported here, turned us over to Dr. Arthur H. Glennan, acting surgeon-general, and Dr. J. W. Kerr, chief of the Research Laboratory. Drs. Glennan and

Kerr grasped the situation instantly. The magnitude and significance of the incident were obvious. The general bearing on the welfare of millions of growing children in America, who rely with profound confidence on the wholly inadequate foods which figured so largely in the general breakdown of the crew of the German raider, was clear to them.

“By their admissions they indicated they realized that perhaps they really were on the verge of a newer and wider outlook upon the sadly neglected field of food research. In minute detail they reviewed the work of Drs. H. C. Sherman and J. Edwin Sinclair, reported by them as far back as 1907 from the Havemeyer Laboratories, Columbia University, in connection with those foods that contain an excess of acid-forming elements as compared with other foods containing an excess of base-forming elements, or alkaline ash.

“They noted the conspicuous fact that in the dietary of the German seamen the alkaline bases were distinctly absent, and that their food was almost totally deficient in these indispensable elements. They noted the fact that Sherman’s and Gettler’s research revealed nearly every one of the foods on which the Germans subsisted for two hundred and fifty-five days, to be of the type that contains an excess of acid-forming elements. The fact that the Germans responded almost instantly to a diet rich in alkaline ash was obviously significant.

“That forty-seven men should be dismissed from the ship’s hospital within a period of ten days, following the ingestion of fresh vegetable soup, potato-skin liquor, wheat bran, whole wheat bread, egg yolks, whole milk, orange juice and apples, was worthy of notice. The fact that no drugs were administered, and that all fat, egg albumen, cheese, meat, white flour and sugar were withdrawn from the crew’s diet, was worthy of notice.”

Interesting Facts About Vitamines

VITAMINES (Vita, essential to life—amine, basic) are organic substances which are present to some degree in practically all natural foods. They occur only in minute amounts under the most favorable conditions. They are essential to the proper nutritional functioning of the body in health and disease and by judicious use of materials most abundant in these substances, they act as prophylactic and therapeutic agents. Extracts of products rich in vitamines have been found to be very efficacious in a number of dietary deficiency diseases.

The discovery of vitamines will, no doubt, have more to do in saving and lengthening human life than any other modern discovery. They come under the class of nutrients which biological chemists and physiologists have come to designate within the last five years as "accessory substances," i. e., those limiting factors, which, when all other food nutrients are present, have been found to be absolutely essential to bring about the proper metabolism in the body.

Vitamines have not as yet been isolated in a pure form. Their salts have been prepared by elaborate and expensive processes. The vitamines are very unstable; easily destroyed by more than moderate heat; soluble in water, alcohol, and acidified alcohol; insoluble in ether, acetone and chloroform; crystalline in form; basic, and closely related to pyridine. Thus far, we know very little as to the chemical properties or the structure of these substances. They do not contain phosphorus or sulphur, but have a nitrogen group.

They are more abundant in beans, potatoes, peas, egg yolk, fresh milk, fresh meats, fresh fish, unpolished rice, brewers' yeast, and less abundant in such foods as highly milled cereals and grains, sterilized milk and meats, salted meats and fish, cabbage, turnips, carrots, starch, molasses, and some canned products. There appears to be more than one kind of vitamine. At present we know there are at least three. These substances are either partially or totally removed or destroyed during

the modern process of manufacturing a number of our foodstuffs. Thus in the milling and handling of such grains as corn, rice, sago, wheat; in the canning and heating of vegetables and fruits; and in the salting and curing of meats and fish.

The fact that vitamins are a positive necessity in arranging a well-balanced diet is nicely portrayed in the article, "The World's Greatest Diet Lesson," which appears elsewhere in this volume. It will be noted that the sailors in this instance were deprived almost wholly of the vitamin element, owing to the nature of their diet, which consisted largely of white (refined) flour bread and biscuits, canned goods, salted fish, salted meats, etc. This form of diet produced most disastrous results among the sailors within a period of two hundred and fifty-five days and would no doubt have annihilated the entire crew within a comparatively short period if it had been continued longer. Yet we note that when this diet was discontinued and they were fed plentifully of the bran liquor, vegetable juices, potato skin liquor, etc., all of which was rich in vitamins, their peculiar affliction quickly disappeared.

The diseases that are closely related to vitamins are beri-beri, scurvy, sprue, rickets, suspended development in children, and undoubtedly some other forms of malnutrition. There is much positive evidence that pellagra is very intimately associated with this factor. It has been shown by the work of Vedder, Funk, Williams, Suzuki and others that a diet which is too rich in polished rice or in milled sago, will produce beri-beri in man or polyneuritis in animals (pigeons) and that, upon extracting the rice polishing so as to recover the vitamin, which is removed in the process of milling, and administering this extract the disease is cured. This was further shown by the Japanese when they reduced the portion of polished rice in the diet of the navy and increased its content by adding beans or substituting natural hulled rice.

The following table brings out this point:

**Effect of Change of Diet On Beri-beri in Japanese Army,
Fleet and Prisons**

	Date	No. Cases	No. in Force	Mortality in Hospital—Per Cent
Old diet	1881	1,163	4,641	2.58
“ “	1882	1,929	4,769	2.64
“ “	1883	1,236	5,346	3.96
New diet	1884	718	5,638	1.11
“ “	1885	41	6,918	....
“ “	1886	3	8,475	....

Funk, Holst, Frolich, Hess and others have shown that by adding the vitamine fraction from the orange, lime or potato, infantile scurvy can be corrected at once. They have concluded that the vitamine in milk is destroyed during pasteurization and sterilization. On the other hand, Gibson claims that the milk vitamine is not affected by this heating. Hess and Funk both state that they find the vitamine fraction from yeast has no therapeutic value in relation to infantile scurvy.

Osborne and Mendel, McCollum and Davis, Funk and Macallum, and Hess, have shown that vitamins are essential to normal growth. By adding certain substances rich in vitamins to an otherwise properly balanced diet, growth (which has been suspended) is immediately resumed. Hess in particular has shown this in the case of children.

Voegtlin, Vedder, Goldberger, Funk and a large number of others are of the firm opinion that pellagra is a dietary deficiency disease. They give much experimental evidence and feel that the fundamental etiology of it is based upon a lack of certain of the vitamins in the diet. This problem is still an open one. The close similarity in many respects of pellagra to beri-beri, and the experimental evidence that is being put forth to disprove its etiology from the standpoint of infection and contagion tends to make one feel at least that it is well worth the effort to give the dietary deficiency theory a thorough trial.

To this end quite extensive experiments have been made to investigate and study the effect of certain vitamine extract upon animals in which polyneuritis has been produced experimentally. The product has

been thoroughly tried out on pigeons. In these animals, fed only on polished rice and distilled water, the disease, polyneuritis, begins to show in about ten days by a loss of appetite and drowsiness. Thereafter, the birds continue to lose weight, become less active, the feet get bright red in color and cold, the eyes take on a peculiar expression, and the feathers become ruffled.

In about twenty-one to twenty-eight days, they can fly up to the perch only with difficulty; they stand with legs straddled; diarrhea appears; mouth is very pale; pupil of eye contracted and wings droop. Finally, about thirty-five to forty days as a rule, the birds refuse to eat, cannot drink, and become almost paralyzed. In fact, some birds have had what appears as a paralytic stroke and collapse. When the last stage is reached the pigeon goes into the fulminating or spasmodic stage—where the head is drawn back and the body takes on a very rigid position. Unless treatment is given at this time, death follows in a few hours.

Treatment with the vitamine extract has produced very favorable results. The bird will, in a large majority of cases, show marked improvement in four or five hours, being relaxed and resting, and after twelve to eighteen hours it will be able to stand, eat, drink, walk, and sometimes fly. In some instances the cures have been more rapid.

After recovering, the birds are sometimes put back on the same diet (white or polished rice) to determine how long a single treatment will suffice. Then again the polished rice diet has been supplemented every other day with natural brown rice which contains the vitamine. The effect of this supplemental or changed feeding is to bring about gain in weight and maintain normal activity of the birds.

In another series of tests, normal pigeons were put upon a diet of polished rice and vitamine extract in order to determine the prophylactic value of the extract. It was found that none of the pigeons came down with polyneuritis even after one hundred and fifty days' feeding.

In the treatment of polyneuritic pigeons, it has been found, in comparing the therapeutic value of the vitamine extract upon birds which were forced—fed (i. e., given polished rice through a tube after they had

lost their appetite) with those which were not forced-fed, that the probability of having successful results is greatly increased if the intestinal tract is empty before giving the treatment. In fact, the chances of recovery are extremely doubtful if the birds are treated when the crop is full, and the speed of recovery is considerably retarded if the crop is partially full. Further, nothing but water should be given for at least eight hours after treatment. It is also essential that the animal be left in absolute quiet for three to four hours and not disturbed in the least, except in dire necessity. During this time the slightest handling or sudden noise tends to bring back the nerve tension and throw the animal into the spasmodic and fulminating stage and thus retard recovery.

Vitamines, from a therapeutic standpoint, are grouped under two general classes, based upon solubility. Class A, water-soluble vitamins and class B, fat-soluble vitamins. According to animal experimentations it has been shown conclusively that the presence of both types of vitamins is essential to the proper nutritive functioning and development of the animal body. This is illustrated in the work that has been done with rats.

When the water-soluble vitamins are withdrawn from an otherwise normal diet the animal soon ceases to grow; that is, its weight remains practically constant for a considerable time, then falls. It sooner or later becomes supersensitive and eventually comes into a nervous state similar to avian polyneuritis, when it partially loses its power of locomotion and its muscular control, and acts delirious. The introduction of the water-soluble type of vitamins orally (added to the diet) corrects all these errors and the animal begins to grow at a rapid rate, gains self-control and appears normal. If this form of vitamin is withdrawn from the diet of an older rat, it also loses weight and gradually gets into the nerve degenerative stage, showing all the characteristic symptoms manifested by the young rat.

The omission of the fat-soluble vitamins from the experimental diet of the young or adult rat may also result disastrously. The changes here, however, come on perhaps more gradually. At least, in the young, the

growth curve begins to flatten out after a period of apparently normal growth and finally it begins to show a fairly rapid decline. The adult rat begins to lose in weight at about the same period of time as the young rat. With both the young and the adult animals, the eyes become involved; first there is edema, later xerophthalmia sets in and unless the diet is changed the animal becomes totally blind. The coat of hair becomes rough and shaggy. The animal is drowsy and stupid.

Diarrhea is usually present in the later stages of this disorder and unless much more than the usual amount of care is taken to keep the cage sanitary the rat becomes extremely dirty and unsightly. Finally the animal will show definite and characteristic nervous symptoms. Modification of the diet will correct these nutritional errors if one does not delay the introduction of the fat-soluble vitamins too long.

The knowledge and study of vitamins is of particular importance in raising children. When children do not grow as fast as they should; if they are weak, languid, losing weight or deficient in their work or studies, or losing teeth or hair, look to their food. You are pretty sure to find that it is deficient in vitamins and organic salts. By substituting foods that have these in liberal quantities, a rapid change for the better will be noted. Therefore, in order to regain health for yourself or for your children, or in order to sustain what is now normal health, see to it that a sufficient proportion of vitamin-carrying foods are at all times included in your menus.

In the refining of flour, some of the most valuable properties of the grain are lost. The phosphorus found in parts of corn, rice, barley, oats and wheat, which are rejected at the mills, is essential to the life and health of the tissues of the body as well as to the integrity of its bone structure, and the health of its internal secretions. Phosphorus is found in the body as phosphorized proteins, which exist in all of the body cells and tissues. In brain and nerve substances the phosphorus appears as phosphorized fats. The germ of the grain, which the millers discard, is particularly rich in these invaluable compounds.

Maxwell discovered that germinating seeds and developing chick embryos in the shell owe their growth and development in large measure to the phosphorized compounds within their reach. These are the forms of phosphorus discarded in the refining of flour. Steinitz, Zadik and Leipziger discovered that the various phosphorus compounds could not be substituted one for the other, and that the proteins of white flour with inorganic phosphates obtained from the drug store, could not in any manner substitute for the phospho-proteins thrown into the waste heap by the millers.

Gumpert and Ehrstrom demonstrated that phosphorus equilibrium was obtained in experiments upon men when the phosphorus was consumed in the form of the very substances rejected at the flour mills; whereas, when taken as dicalcium phosphate of meat they did not serve the body at all. Hart, in experiments with hogs, at the Wisconsin Experiment Station, found that 1.12 grams of phosphorus per day in its various compounds, as elaborated by Mother Nature, was just about sufficient for the hogs until they attained a weight of eighty-five pounds. After this the 1.12 grams became clearly insufficient for their requirements. Sherman tells us that 1.12 grams of phosphorus compounds would hardly seem a desirable amount for a growing child of the same weight, or for a fully grown man or woman.

The millers of white flour, however, ignore the foregoing facts because in white flour they have removed all of the phosphorus compounds which accompany the removal of the iron compounds, the potassium compounds, the calcium compounds, and all the other mineral salts which are sifted and bolted out of the whole grain, whether wheat, corn or rye. But they cannot reconcile their performance with the now known laws of nutrition by concealing it behind a bombastic attack against the vitamin, the existence of which they ridicule, notwithstanding the fact that its presence has been firmly established by the world's greatest scientists. Instead they boast of the heavy percentage of proteins contained in their patent flour and say nothing of the loss of the phosphorus and calcium, the importance of which may be gleaned from the foregoing paragraphs.

The prevalence of beri-beri among the Philippine Scouts in 1908 furnished a notable example of the effect of foods deficient in vitamins. At that time there were 618 cases of beri-beri out of 5,000 men. The diet then consisted of 12 ounces of beef, 8 ounces of white flour, 8 ounces of potatoes and 20 ounces of polished rice. These, as you will note, were all deficient in vitamins. Later the rations were changed from polished rice to rice flour (16 ounces) which contained the outer skin, rich in vitamins, and dried beans (1.6 ounces) instead of the meat, for proteins. These changes in diet reduced the number of cases to 50 in 1910; 3 in 1911, and in 1913 to none.

It is the writer's honest opinion that disease could be rendered a thing unknown by a perfect knowledge and practical application of the laws of scientific eating, whereby the correct proportion of vitamine-carrying foods would at all times be taken. There would then be no excuse for poisoning the system with drugs. Your medicines would be obtained from the organic salts of vegetables and fruits—not from the drug store. Not alone beri-beri, pellagra, rheumatism and the like, but as well diabetes, Bright's disease, tuberculosis—even cancer—would be terrors unknown.

The temporary relief we seem to experience from the use of drugs in the treatment of disease is, at its best, but a false condition. The drugs act as foreign bodies in the system. The organism makes a desperate effort to throw them off, and in so doing vast quantities of the protecting germs (vitamins) are called into action to fight off the poison. Vast armies of these vitamins are thus used up without substituting any fresh ones. This saps the vitality and only tends to further weaken the patient's resistance against disease.

On the other hand when you battle disease in nature's way—and that is by scientific eating—you throw into the system vast reconstructive armies, through vitamine-carrying foods, that outnumber, attack and quickly subdue the destructive germs that are the cause of the disease. Their ravages once stopped, nature is enabled to prosecute her work of upbuilding of the cells and tissues. Normal health will be re-established

in a length of time proportionate to the amount of repair work that had to be done. The functions of nature are always to upbuild—never to tear down—and when the power of her arch enemy (the destructive germs) has been sufficiently curtailed by vitamins her reconstructive work goes on merrily, and with amazing rapidity.

Seemingly contrary to general rule, live steam passed through butter does not affect its vitamins. Butter is rich in fat-soluble vitamins, which are invaluable for growth. It is wise economy to use only the best grade of butter, and that unsalted, as salt is harmful to the system. Oleomargarine, being prepared from lard, does not contain vitamins. The whites of eggs do not contain vitamins. The yolks, however, contain both varieties and fortunately heat does not affect them much. Milk is the ideal food that contains large quantities of both kinds of vitamins and it should be used liberally every day with the other foods. But it should always be taken as fresh as possible, and unpasteurized, non-sterilized and non-condensed, to make sure that you are supplying your system with plenty of vitamins and organic salts. The microbes in fresh milk need have no terrors for you if you are living on a well-balanced and clean diet.

DR. WILEY ON "VITAMINES"

Dr. Harvey W. Wiley, the eminent authority on foods, has the following to say regarding vitamins:

"The vitamine (I use this term for lack of a better one and because it is more commonly employed) is so far as we know solely of vegetable origin. It is introduced into the body with foods and is deposited with its vitality very little, if any, diminished in certain tissues of the body and in the secretions of the body, especially of milk-giving animals. In the milk it is found to be largely concentrated in the fat. In vegetable fats or oils it is not found in any very considerable quantity. When we drink milk, we get the vitamins that have been transmitted to the milk from the food of the milk-giving animal. When we eat meat we also get a modified or weakened form of vitamine. Inasmuch as man is an omniver-

ous animal, if he rightly balances his diet, he secures a proper amount of vitamins largely from the vegetable, and to a limited extent from the animal, part of his diet, especially milk and eggs.

“The next important consideration in the construction of a menu is to determine what vegetables and what parts of such vegetables contain the vitamin in abundance. This question has been answered in a satisfactory way by recent investigations. All vegetables contain this vital element. In cereals it is found largely, if not almost entirely, in the bran and germ, and not to any extent in the starchy parts of the grain. In vegetables it is found both in tubers, as in the potato, and in the leaves. Among the grasses and clovers it is also abundant, especially in alfalfa. Alfalfa is one grass which can be eaten by the non-ruminant animal. Spinach, cabbage, green hulls of peas, beans, and nearly all succulent vegetables and fruits, and especially potatoes, contain the vitamin in abundance. Among fruits the orange and apple are prominent representatives, containing valuable vital elements. Orange juice is a preventive of scurvy among children who use pasteurized milk. Some investigators think the orange element is not a real vitamin, but some compound of citric acid. If it is a compound of citric acid that does the work, this compound is to that extent a ‘vitamin.’ Vitamins are commonly divided into two classes, namely, those soluble in water and those soluble in oil or fat.

“The third fundamental consideration in guiding us to a scientific construction of human menus is the principle that foods artificially deprived of their vital elements can not safely be used on the assumption that other foods employed will furnish the necessary vitamins and minerals to replace those that have been artificially eliminated. There is no error of diet theory that needs stronger contravention than this one. It is found constantly in official bulletins and other publications favoring the use of devitaminized cereals in bread-making.

“This radical misconception of the scientific diet is illustrated in Farmer’s Bulletin No. 807, issued as late as April, 1917, from the Department of Agriculture. On page 25 you will find the following (the black letters are mine):

“ ‘So far as mineral matter is concerned, bread is particularly rich in phosphorus. It should be supplemented, however, by something which contains more lime and iron, especially in the case of children. Milk provides the lime, and fresh fruits and vegetables the iron. If the latter are served in reasonable abundance, **the kind of bread used is not a matter of great importance.**’

“ ‘As long as the officials who have charge of our food supply hold such opinions as the one just mentioned, we can not expect any great improvement in our diet. It is true that the authors of the bulletin just quoted immediately after the above quotation make the following statement:

“ ‘If, on the other hand, fresh fruits and vegetables can not be obtained, it is considered desirable to use whole-grain flour in order to bring up the amount of mineral matters and of cellulose and to be sure of a sufficient supply of certain important growth-regulating substances (vitamines.)’

“ ‘If this statement were made in place of the other and insisted upon by our authorities, both state and national, the propaganda for reform in our diet would go forward by leaps and bounds. Is it not entirely reasonable to suppose that the diet containing the minerals and vitamins acknowledged to be present in whole-wheat flour and acknowledged to be absent in white flour should be the one particularly urged? On the contrary, this natural diet is mentioned only as a last resort, instead of first. If to this we add that by using a diet of this kind our wheat would be 33 per cent more efficient than it is today, we establish both from the economical and health points of view the supreme necessity of an official change of heart in this direction.’”

Osborne and Mendell discovered that animals fed on mixtures of refined proteins and sugars, starches and fats—which have a greater caloric value than any other foods—even when combined with inorganic matter in the form of crystallized salts, rapidly declined in health. In these feeding experiments milk whey was found to contain the elements necessary to health. Milk whey has no caloric value whatsoever. In spite of this, when it was added to the refined foods the health decline

in the animals was arrested, yet milk whey contains none of the fats of milk or proteins, only the organic salts of calcium, potassium, phosphorus, iron, etc.

Quoting Tilden: "When one organ gives down—when the blood is deprived of the proper amount of building salts—the whole organism is deprived of the necessary building salts. When imprudent eating—sugar eating, cake eating, rich meat and gravy eating—has been practised so long that enzymic fermentation is not equal to the task of physiologically digesting the intake, then it is that organic ferments—bacteria, microbes—set up pathologic fermentation, which is slightly toxic when developed in the carbohydrates and fats, but putrefactive and decidedly toxic in the animal products.

"The organized ferments cause a souring of fruits, vegetables and starches; the acid builds irritations and catarrhal inflammations of mucous membranes; and in this way the stomach may become the exciting cause of organic depression and catarrhal affections of all the organs of the body."

"CHEAP" FOODS NOT ECONOMICAL

Are all cheap foods economical? At first thought you may be inclined to answer, "Yes." This is not the case, however, because "cheapness" and "adequacy" are words of widely different meaning. Based on caloric value, sugar would be one of the cheapest foods on the market, because a pound of it at ten cents contains as many calories as three pounds of veal at a dollar and a quarter.

We could secure from a pound of corn syrup, at five cents, as many calories as we would from three quarts of best milk at about fifty-four cents; as many calories from a pound of cream of wheat at fifteen cents as from three dozen eggs at a dollar eighty cents; as many calories from fifteen cents worth of corn flakes as from one dollar fifty cents worth of Roquefort cheese.

By comparison further along the line of the much abused caloric basis, we find that a ten-cent pound of white bread would equal a dollar

twenty cents worth of bluefish; fifteen cents worth of rolls, a dollar's worth of cabbage; thirty-five cents worth of oleomargarine, a couple of dollars' worth of potatoes; six cents worth of corn starch, three and a half dollars' worth of lettuce—and so on.

Here you have a comparison of cheap foods with expensive foods, as considered according to caloric values. These cheap foods, if universally relied upon, have the power to transform us into a nation of invalids within a comparatively few weeks' time; in a few months more, to completely annihilate us. On the other hand, by including the expensive foods we may form combinations that will sustain life and health indefinitely. It, therefore, follows that no food is "cheap," no matter how insignificant its cost, that does not contain the mineral salts and vitamins that are necessary to sustain life.

Yet there are foods that are both cheap and adequate. Whole wheat bread, whole rye bread and whole corn bread are some of these. If one's meals are always accompanied by a generous supply of these whole grain breads or whole grain cereals, it is a pretty safe wager that, unless one overeats, the health will not be menaced. In this connection I want to impress upon my readers the fact that the little hand grist mill, mentioned elsewhere in my book, will prove worth its weight in gold in every home, for it will be the means of providing a cheap yet efficacious whole grain food that is not generally obtainable at the stores. Whole grain cereals prepared in this manner, with wholesome, pasteurized milk, constitute about the cheapest meal now obtainable in America, and at the same time contain all the elements necessary to growth and health.

IMPORTANCE OF A BALANCED DIET

The important part that mineral salts play in the diet is today generally recognized, and the term "balanced diet," has especial significance. Science has taught us that all foods give rise to either bases or acids in the human body. The quantity of bases must be sufficient to counteract the acids, otherwise the diet is not well balanced, there being a deficiency of alkilines. The above term, therefore, is properly used in describing a diet where the acids are perfectly counteracted, or balanced, by the bases.

Fresh meats cause acids. Their consumption should be accompanied by a liberal quantity of green vegetables with their juices, which produce bases. Unrefined grains and sweets produce both bases and acids in normal combination. Refined grains and sweets produce acids.

Auto-intoxication is one of the certain results of an unbalanced diet. This is a condition wherein there is an accumulation of toxins created in the body through faulty elimination and absorption. Meat, being one of the pronounced acid-forming foods, it surely leads to this form of poisoning, unless eaten in connection with plenty of vegetables, which should be taken to counteract the acids of the meat.

Quoting from McCann: "An excessive meat diet causes an excessive elaboration of free sulphuric acid and free phosphoric acid in the blood as a result of the decomposition of the albuminoid sulphur and phosphorous-containing compounds of the tissues. When man's diet lacks these salts the acids abstract basic elements from his tissues, leading to an impairment of their functions or to their destruction. Such a diet is not and cannot be balanced and must eventually work havoc."

It is a well established fact that among athletes there is a condition known as "going stale." This is merely a form of auto-intoxication, or poisoning, resulting from an excessive acid diet. The athlete by means of the vigorous exercise he is engaged in counteracts or modifies, to some extent, the effects of this acid—otherwise it would perhaps be manifested in the form of rheumatism, arthritis, gout, etc.

No type of athlete is exempt from this condition of "staleness," whether football player, wrestler, boxer, or oarsman, and no matter what form it may take it is certain to weaken or destroy his endurance and power of resistance. Biliousness, constipation, with its long train of evils, and appendicitis, fall to the lot of these misguided victims of excessive meat and egg (acid-forming) diets.

Muscle consists largely of protein, and protein is the element that nature uses to repair broken-down muscle tissue. Yet, while this is true, it is also a fact that protein taken in excess of what is actually required for the building and repairing of waste will create in the body an excess

of acid, which if not counteracted by bases, will work a serious hardship on the victim. And it is an unfortunate fact that in the usual form of refined diet these counteracting bases are not present.

It follows, therefore, that the perfect diet in any line of endeavor—be it athletics or sedentary occupation—is the one that is properly balanced by natural and unrefined foods. Of these, breads composed of the whole grains—wheat, corn, rye, etc., unrefined sugar, unsulphured fruit, fresh vegetables and pure milk must necessarily play an important part.

The common-sense plan for balancing the diet is to reduce the quantity of meat and eggs to the minimum and increase the quantity of fresh vegetables and fruits. This form of diet will supply in ample quantity the material needed for the maintenance and repair of muscle tissue in the athlete and supply the necessary elements to sustain the powers of resistance and endurance in all, be they athletes or sedentary workers.

The chief acid-forming foods are meat, refined starches, fish, the whites of eggs, sugars and cheese. The base-forming foods (which counteract the acid-forming foods) are milk, buttermilk, beans, peas, oranges, lemons, grape fruit, melons, pineapple, plums, peaches, apricots, cherries, grape juice, apples, pears, bananas, rhubarb, prunes, dates, figs, raisins, currants, cranberries, raspberries, almonds, cocoanuts, chestnuts, celery, radishes, ripe olives, beets, onions, tomatoes, cucumbers, potatoes, turnips, parsnips, pumpkins, squash, carrots, cauliflower, cabbage, lettuce, spinach, asparagus, whole grain foods, etc. These furnish the alkaline salts that are absolutely necessary to insure a normal constituency of blood and other secretions.

A nice experiment was conducted by Bunge to demonstrate the value of the mineral constituents of the bran of wheat, in comparison to the deficiency of white bread, for growing animals. Eight young rats of the same litter and of approximately the same size were selected and separated into groups of four each.

One group was fed on white bread which contained:

0.0015 per cent iron compounds

0.045 per cent calcium compounds

0.28 per cent phosphorus compounds.

The other group was fed on whole wheat bread containing:

0.0055 per cent iron compounds

0.077 per cent calcium compounds

0.90 per cent phosphorus compounds.

The rats receiving the whole wheat bread obtained nearly four times as much iron, three times as much phosphorus and nearly twice as much calcium as the other group. They grew more rapidly and their blood contained a larger quantity and higher percentage of hemoglobin, at the end of the experiment, than the other rats. The mineral salts contained in the bran of the wheat went toward the building of bone, muscle and blood, and the rats fed on the whole wheat bread were much better nourished than those fed on the white bread.

The result of this interesting experiment should furnish to all a forceful lesson in the importance of including in the foods for human consumption all possible of that portion of the grain which contains an abundance of the elements, iron, phosphorus and calcium. No other kind can well be considered a balanced diet. Volumes are contained in the simple statement that whole wheat bread and water will sustain life, while white bread and water will not sustain life, for white flour cannot supply to the body the vitally necessary elements that have been taken from it in the refining process.

In this connection it will be well for my readers to know that it is entirely practicable to grind whole wheat in the home and use it for breakfast foods and bread making. It can be ground in the coffee mill for breakfast food and even for flour.

A hand grist mill of substantial make can be bought for from \$2.50 to \$5.00. A small one may be had for \$1.50.

The directions are to first wash the wheat until the wash water becomes clear; it is then spread on a cloth and dried before being ground. Ground in this way the grain contains all the nourishment in the wheat. In other words the sixteen elements found in the earth, found in the human body, and absolutely essential to the upbuilding and growth of the human body, are found in natural cereals. Foods prepared from these

natural cereals (for all other grains can be ground at home in the same way) contain more mineral matter than products prepared from grains that have been deprived of their outer coat and their germ, hence they are better sources of nutrition. They are more laxative, they are better sources of growth-promoting and body-regulating substances. In other words, they contain more vitamins, which play an important part in keeping the people in good health.

The cooking of these cereals is a matter that requires more time. They must be cooked several hours. In case a gas range is used to begin the process, the fireless cooker will be found of great help in securing sufficient time to insure complete cooking. In case a coal range is employed the oven may be brought into use and the cereals cooked in a covered crock as beans are. The rule for salting wheat is a level teaspoonful of salt for every cupful of water used. To every cup of coarsely ground wheat use a quart of salted water. If put into cold water and allowed to gradually heat there will be no danger of the wheat becoming lumpy.

By preparing this wheat mush with skimmed milk used in place of water a much more nutritious food product results and adds protein equal in value to three or four eggs. The skim milk also adds one and one-half ounces of milk sugar together with valuable mineral substances.

WHOLE WHEAT FLOUR

The entire kernel of the wheat or rice grain is necessary to completely nourish the young plant. The most vital part is the germ or embryo, since it forms the young plant in the earlier stage, before it is able to take outside nourishment from the air or soil. The portion called the endosperm, which is bulkier, is a supplemental food, or it may be called a reserve fuel supply, being for the use of the young plant after it begins to take outside nourishment from the spreading root system.

The less important and less complete portion of the grain has been selected by the milling industry as the proper food for man, while the germ and the bran portion have been given over to cattle feeding. This may be in part accounted for by the housewife's preference for a white

flour; and with just as much good judgment as she would prefer pickles dyed a beautiful green with copper salts. Color is not a guide to quality, and attractive colors may be secured at the expense of healthfulness, by taking out the vital elements, as is done in the case of white flour, or by putting in harmful ones.

It is claimed, on authority, that our millers, by grinding into flour a larger percentage of the wheat berry, can increase the available annual wheat crop by some seventy or eighty millions of bushels. Not only this, but they would at the same time, provide a far more wholesome material for bread making than they are now producing, for it is a fact that the present-day refined flours of America have been robbed of some of their most valuable, life-sustaining elements. And white flour is responsible for widespread malnutrition and probably for pellagra, rickets and countless other diseases caused by deficiency in food values.

Whole wheat bread supplies the necessary roughness and bulk to the diet, which white flour bread lacks. It is not all absorbed, and yields a natural stimulant and necessary bulk for the intestines to work on. Most important of all, it contains the vitamins, which are necessary to life itself. It has been proven that animals will live longer on no food at all than upon an exclusive diet of white bread. Could the American people be made to thoroughly realize the importance of whole wheat bread as a health measure there would be no other kind used.

WE MUST EAT LESS MEAT

Anthony Bassler, in the American Journal of Electrotherapeutics and Radiology, was responsible for the statement, now conclusively proved, that not more than two ounces of proteins per day can be utilized by the human body. There are two ounces of protein contained in four ounces of roast beef, beefsteak, lamb chops, pork chops, sausage, bologna, chicken, fish or ham; therefore, Bassler states emphatically that the limit of any kind of meat—for anyone—should be four ounces, because any quantity in excess of that must be thrown off as waste by the body, or else stored up as poisons which must be removed by the kidneys.

Now comes the question, "What is protein?" Besides meat there are eggs, milk, cheese, nuts and a very considerable part of grains—corn, wheat, barley, rye, etc.—which are protein. Now the significant point is this: In the United States there is consumed daily an average of 80 grams, or nearly three ounces of protein, as testified by Dr. Clyde L. King, Assistant Professor of Political Science at the University of Pennsylvania. Dr. King showed also that the consumption of protein in various other countries was, before the war, as follows: Germany, 61 grams; France, 44 grams; Japan, 14 grams; Austria, 27 grams; Russia, 26 grams; Italy, 52 grams.

The above evidence goes to prove that we, in the United States, are consuming far too much protein—about thirty-five grams more daily than we have power to dispose of; and our kidneys have to bear the brunt of this abuse. These facts would not be so bad in themselves if they gave us the key to the situation exactly as it is, but they do not. Aged persons, sick persons, babies and children under fifteen years of age, as well as the extremely poor, do not consume this daily average of eighty grams of protein.

In order to bring the daily average up to eighty grams, there are vast numbers of persons who must consume not only their rightful share of protein (two ounces), together with the thirty-five grams excess consumed, but they must, on top of all this, consume the vast amount that the babies, children, old persons and invalids do not consume. This brings the average amount consumed by the vast number of "meat drunkards" up to far above the eighty-gram level. In fact, there are undoubtedly millions of persons in this country who consume up to one hundred, and even one hundred and fifty grams.

In America there were produced in 1916, 22,400,000,000 pounds of meat; 7,900,000,000 gallons of milk; 1,847,000,000 dozens of eggs; 567,000,000 fowls and billions upon billions of pounds of cereal protein. Now, in meat-eating, man discards the bone, and largely the blood of the animal, consequently he does not obtain all of the life-elements, as they are obtained by the flesh-eating beast, for instance.

By discarding both the blood and bones of the meat-producing animals man, therefore, secures but little of importance outside of nitrogen, potassium and phosphorus. On the contrary, he obtains the waste substances that were being developed in the animal's tissues at the time of its death. That meat, for this reason, is incapable of supplying the needs of the body can be ascertained by the fact that in young dogs it is easy to bring on a condition resembling "rickets" in children by feeding the dogs exclusively on meats and fats. If, however, pulverized bone is added to this diet, rapid recovery is experienced by the dogs.

I do not advise against a reasonable consumption of meat, for animal flesh is often of much value, provided the meat is cut from a healthy animal. But the fact should not be lost sight of that rheumatism, catarrh, blood diseases and various other disorders are incapable of cure when an excessive amount of meat is consumed. For it must be borne in mind that in meat eating we consume the end-products of the animal's existence. We get the urea, the uric acid and the toxic waste. In eating whole grain foods, milk, legumes, etc., we get as much nitrogen—even more—but avoid the urea and other toxic matters. And, an interesting fact to note in this connection, is this, that ten pounds of corn is necessary to produce a pound of beef. The ten pounds of corn will support ten men for the same length of time that one pound of beef will support one man.

A meat diet has a tendency to acidify one's blood, and mankind's only hope of defense against disease is normal alkalinity of the blood. Commenting on the findings of A. E. Wolff, who has analyzed the flesh of veal, beef, and mutton to determine the average of alkalines and acids in one hundred parts of such flesh, Armond Gautier has the following to say:

"In the ash of muscle, phosphoric acid is united to the extent of two-thirds to the potassium of the tissues. The other third, not finding sufficient alkalinity to neutralize it, remains mostly acid. The sulphuric acid found in the tissues comes from the sulphur of the albuminoids. The destruction of meat in the body thus tends to acidify the blood both by

mineral acids and organic acids, which originate from the digestion and decomposition of meat.

“To render these acids harmless they must be neutralized in the body.

“In a meat and vegetable diet the vegetables furnish the alkalines necessary to neutralize these acids.

“Meat eaters should therefore always supplement their diet with plenty of fresh vegetables and should see to it that none of the alkaline juices of the vegetables are lost in cooking.”

Meat should never be consumed raw, on account of the danger of infection from tuberculosis, trichinosis and various other diseases. In the case of a tubercular animal, the glands are always affected, even though the disease is not evidenced in the tissues. The lymphatic glands, which lie imbedded in the flesh, are not sterilized by the heat ordinarily applied to a heavy roast. When heat is applied to milk at 145 degrees, Fahrenheit, for thirty minutes the germ of tuberculosis is killed. This process is known as pasteurization. Heat, however, penetrates very slowly to the center of large pieces of meat, since it is a very poor conductor of heat. If there is much of the blood-red color of raw meat remaining in the interior of a beef roast, it is certain that the heat has not been sufficient to kill the germs, if any were present.

Meats that were known to contain tuberculosis germs were subjected to the ordinary methods of cooking by Dr. Woodhead of the British Royal Commission. After the meats were cooked he used the inner portions to feed and inoculate animals. His experiment proved that the most nearly perfect method of cooking meat is by boiling. It was conclusively proven in this test that the inner portion of a joint weighing six pounds, through ordinary cooking, did not attain more than 140 degrees, Fahrenheit. The inside germs were not destroyed.

The fibres of mutton are finer than those of beef, and its connective tissues loose, consequently it is more easily digested. Veal is difficult to digest. By way of explanation of this, it is claimed that the fibres of veal escape the action of the teeth; and furthermore, because its flavor is insipid it fails to stimulate a sufficient flow of gastric juice. Pork is diffi-

cult of digestion. This is because of its high fat content, fat requiring a longer time to digest than muscle fibre. Bacon, however, constitutes an exception to the rule, for it may be digested readily by many who find difficulty in digesting other fats.

The breast of chicken and game is more easily digested than any other form of meat. Perhaps one of the most wholesome of meats is lamb, for sheep are free, to a great extent, from the diseases which affect so many other animals that are slaughtered for food. Beef tea is made by boiling the flesh of old cows. The soluble substances which are present in the tissues are extracted by the boiling. The cast off cells of the old flesh and the waste products of the muscles are soluble in water and they, therefore, enter the extract. The insoluble waste which appears in solid form becomes corned or canned roast beef.

Roughage as Aid to Health

THE human body may be likened to a complex power plant, food being the fuel which keeps the plant in action. The stomach receives the fuel (food) and grinds it up by contractions of its muscles, and rubbing it between its walls. The juices of the stomach then prepare the food for the next step in digestion, after which the contents are passed on into the intestines.

The entire intestinal tract is about thirty feet in length. Five or six feet constitute the colon, or large intestine, the remainder being smaller in size and is called the small intestine. The entire length of this tube is coiled in the abdomen and firmly attached to the back. The intestinal tract is elastic and admits of considerable distension. When it is filled it automatically relaxes and contracts, these movements forcing the contents gradually downward.

During the process of digestion, which is largely accomplished in the intestines, the fluids with their contents are absorbed and are appropriated by the various organs and tissues. Fluids that have a waste content are carried into the intestinal tract and emptied, principally in the large intestines or colon.

The skin or lining of the alimentary canal is quite similar to the outside skin of the body. The latter allows fluids to pass readily out through it, to the surface of the body. The intestinal lining permits fluids to pass through it in either direction. When food is too highly concentrated, there is little residue left in the intestinal tract and sluggish elimination results. As for instance, fluid foods, fruit juices, sugars, starches, fats, etc. These are almost wholly absorbed from the intestinal tube and go to the tissues and organs of the body.

Foods, such as the outer covering of grain, the stringy parts of vegetables, raw cabbage, string beans, asparagus, spinach, oranges, prunes, the fibre of meat, etc., all leave a residue. This is because of the fact that they are not digestible or soluble and not absorbed. For this reason,

therefore, as well as to secure the vitamine elements of these foods, it is important that we eat the whole grain of cereals, and the fibrous, coarser parts of vegetables and fruits, if we are to keep our digestive organs functioning normally.

Disturbances of the digestive tract are often indicated by disorders of the skin, such as eczema, hives, acne, etc., and articles of food eaten by one person with impunity may cause in another a very pronounced skin disorder. Among the foods that produce this condition—known as an idiosyncrasy—are lobsters, clams, oysters, shrimps, mussels, sausage, veal, nuts, mushrooms, strawberries, etc. Many persons find that eating certain of these will produce a rash on the skin because they disturb the digestive process.

Bulky food is necessary because it forms a filler or “roughage” in the intestinal tract. It stimulates the muscular contractions of the intestines, enabling them to more readily push the contents onward in their eliminative process. It also holds moisture and prevents clogging up of the intestines.

When the waste matters that are absorbed from the tissues reach the colon they are in solution. The solids are here separated and the fluids again absorbed. The solids sometimes become dry and incrustated on the inner surface of the tube. This incrustation, when allowed to remain on the colon walls, is alternately dried and moistened by inflow and absorption. Thus an amount of poisonous matter is reabsorbed, which becomes a serious tax to the kidneys, lungs and skin in endeavoring to find an outlet.

When there is a lack of filling in the intestinal tube there is a consequent clogging and faulty elimination of the waste matter. The nutrition is seriously interfered with, the kidneys and lungs are overburdened and the skin becomes clogged with the waste. The victim's resistance to infection then becomes greatly lowered. This clogging and faulty elimination is the cause of most bad complexions.

The common-sense remedy for this clogged condition is to eat more roughage, meaning foods that contain the rough, indigestible portions, which will fill the intestinal tract and cause a normal peristaltic action

in the tubes. Among the chief offending foods in impairing digestion and assimilation are sugars in excess quantities, as taken in candies, desserts, pastries, etc. These are usually taken after an already full meal and consequently give the digestive tract more work than it can perform.

The fallacy of using cathartics to remedy the clogged condition will be understood when it is explained that cathartics perform their work by partially stopping the outflow of fluids from the intestines and by increasing the inflow. This increased inflow of fluids tends to fill the tube and increase the muscular action, which flushes it out. But in doing so the natural process of digestion and absorption of nutritive properties into the tissues is temporarily stopped, and the nutritive matter is expelled with the waste.

After this explanation you will understand how important roughage is to everyone who would have and maintain perfect digestion and elimination. Roughage should form a part of every meal, and it should be well distributed throughout the other foods taken. As some persons require more roughage than others, the exact amount necessary in any individual case can only be accurately determined by testing its effects.

Summing it up in a few words, in order to have health there must be thorough elimination of the waste matter from the body, and to secure this the intestines must be kept in an active condition. This can only be accomplished by eating foods that leave a sufficient amount of residue in the tract after digestion has been accomplished. Refined and concentrated foods leave but little residue.

We must learn to eat foods as nature intended we should, and in the form that nature supplies them. Then will we be blessed with the priceless gift of a strong heart, healthy kidneys, powerful lungs and a general condition of robust health that will be radiated in the glow of a perfect complexion—that unfailing indicator of a healthy body.

Dehydration of Foods

DEHYDRATION is a process of drying foods, by which all forms of vegetables, fruits, etc., grown on the farm may be conserved so as to keep indefinitely. In some foreign countries there are vast numbers of dehydrating plants in operation. Thus during seasons of surplus production the farm products are preserved for use during the days of shortage.

In the United States but comparatively little attention has as yet been paid to dehydration, although it is one of the vitally important schemes of conservation of food, which must, sooner or later, be given the most serious consideration. You will gain some idea of the importance of this plan of conservation when I tell you that the United States Department of Agriculture has stated that fully fifty per cent of the fruits and vegetables grown in America rot on the ground, owing to the difficulties of transportation, and the fact that only the finest of vegetables and fruits will pass inspection for profitable shipping.

In each thousand pounds of fruits and vegetables there are approximately seven hundred and fifty pounds of water—or about three-fourths of the total weight. By dehydration, this thousand pounds of food may be reduced in weight to but approximately two hundred and fifty pounds. Thus a truckload of fruits and vegetables, after dehydration, would weigh but comparatively little and fill but a good-sized barrel. Think of the economy in handling and in transportation charges on foods that have had their bulk and weight so materially lessened. The foods of the farmer can in this way be delivered cheaply to any point, and the prices of same materially lowered.

So much for economy in handling and shipping. But that is one of the least important considerations. Thousands of persons are dying each year in the United States, from a lack of alkaline salts and other valuable elements contained in the fruits and vegetables, of which fifty per cent, as previously noted, is going to waste. This fact is responsible for the forcing up of the prices on the remaining fifty per cent that is marketed,

to a point prohibitive to untold numbers of families in poor, or even in moderate, circumstances. We in this country are, therefore, contributing, in a measure, to thousands of unnecessary fatalities each year among our residents simply because we have so far turned a more or less "deaf ear" to the subject of dehydration.

The water that is evaporated out of the food in dehydration can be added at time of using, thereby bringing back the "freshness" to the foods. And the American process, so little used, is far superior to many of the foreign processes; so much so, in fact, that the largest manufacturer of pure fruit extracts in this country succeeds in retaining perfectly the delicate fragrance of the raspberry in the dehydrated product. The American process does not injure the cellular membranes of vegetable matter, and not even an atom is lost, of either the flavor, color or nutritive value of the food.

Everyone is familiar with the dreadful ravages experienced from the "flu" epidemic of 1918-1919, which claimed in the United States alone, hundreds of thousands of lives. As an illustration of how "physical fitness" renders not only the "flu" germ, but all other germs, powerless against human life; and further, how these same hundreds of thousands of persons might have been blessed with the power of resistance against this germ, had their bodies been fortified with the valuable salts that annually go to waste along with the fifty per cent of our fruit and vegetable crop, I will cite the case of the two hundred and fifty children of the Leake and Watts Orphanage of Yonkers, New York, as told by Mr. McCann. His story, in part, follows:

"In Yonkers, N. Y., a city of one hundred thousand population, six thousand of whose sons went to the front in 1918, stands an institution known as the Leake and Watts Orphanage. Under the supervision of A. S. McClain, its two hundred and fifty boys and girls between the ages of six and sixteen have solved the food problem now vexing the world.

"This man, McClain, . . . had common sense, energy and vision. His heart was in his work, in the welfare of the children under his care, and in the future of the nation of which they are to become citizens. While the rest of the world was preparing for a siege of hunger . . .

McClain and his two hundred and fifty orphans, aided by his splendid wife and her two children, were preparing against the siege not only by providing for their own needs, but also by setting up a standard of patriotic foresight that should have been copied throughout the world.

“Had there been more men like McClain, humanity today would be exactly one hundred per cent better off. . . . I have just left the Leake and Watts asylum, where the fruits of its praiseworthy activities are on exhibition in the form of a storehouse well stocked with the wholesomest food in the world, and two hundred and fifty happy, healthy children, whose resistance to disease is so remarkable that during the Fall epidemic of influenza, 1918, not a single child in the institution was ill.

“A congressional committee might well examine the sixteen thousand pounds of dehydrated and preserved tomatoes, white and green string beans, rhubarb, cabbage, chard, spinach, apples, peaches, corn, celery, beets, lima beans and onions which the children raised on a sixteen-acre plot, and then dehydrated without expense by utilizing the waste heat of the laundry. All these foods were carefully prepared and their moisture driven off at night in the clothes dryer, leaving only the sweet and succulent solids behind.

“The great work began in the Spring of 1918, and continued throughout the Summer season. The sixteen acres farmed by the children were intensively cultivated. Between the rows of spinach, beans and tomatoes were grown so that during the short season practically three crops were harvested.

“The dried apples were not degraded by the sulphuring process which now curses the dried fruit industry of commerce. McClain learned that by dipping the sliced apples, before drying, in a solution of ordinary water and salt, eight teaspoonfuls to the gallon, the fruit, after drying, was just as white as the most fastidious buyer could ask for. The crazy old system that is satisfied with rusty prunes, rusty raisins and rusty currants demands beautifully bleached apples, peaches and apricots, notwithstanding the fact that in the bleaching the fine flavor of the fruit is lost and poisonous sulphites are added.

“It would prove a revelation to all the institutions of America if they could send representatives to the Leake and Watts Orphanage, to see for themselves, by contrast, how dark and ignorant are the absurd food standards under which America groans.

“There they stand, sugar barrels filled with dehydrated vegetables, topped with brown paper covers, pouring forth their riches of alkiline salts and cellulose to fortify the blood stream and sweeten the tissues of the little people who thrive gloriously under the roof of an institution.”

APPLES AS A HEALTH FOOD

Apples are well recognized as one of the most healthful of fruits. They are known to contain vitamins which are so essential to health. It is no doubt this vitamin element that makes the apple so valuable as a health food and that is responsible for the well-known saying, “an apple a day keeps the doctor away.”

As Doctor Kellogg says:

“It is customary for people who use a fruit and vegetable diet to eat apples, in some form, daily.

“With a view to learning something definite about fruit as nourishing, extended investigations were undertaken at the California Agricultural Experimental Station by Professor Jaffa. The result showed that a fruit diet is fully as digestible as an ordinary mixed diet, more wholesome and less expensive. A person may live on fruit and nut diet indefinitely and the body will be supplied with the requisite protein and energy.

“Occasionally a person is not able to eat uncooked apples, but there are many who can digest scraped apples when they cannot otherwise eat them raw.

“Baked apples and apple sauce are among the most digestible of fruit foods. Apples are slightly laxative and an apple eaten at bedtime is often used for its laxative effect.

“The apple is one of the first fruits given to children and should form a part of the child’s daily menu. Apples with cereals, apple sauce with bread and baked apples with milk as desserts are all acceptable ways for serving apples to children—or adults.

“The apple is used extensively in the manufacture of jellies and preserves. Numerous factories have sprung up all over the apple-growing regions of the country, and they make use of second and third grade apples and also the waste products—cores and skins—resulting from drying and evaporating the fruit. It has been found that jellies made from apple waste are almost as good as those manufactured from whole fruit.

“Apple juice expressed from sound apples is one of the most healthful products of the orchard. It can be kept sweet and unfermented by heating it to a temperature of 160 degrees, Fahrenheit, and holding it there for thirty minutes, then sealing it up tight in bottles and storing it in a cool place. Unfermented apple juice is rapidly becoming more popular and is winning a place beside orange and grape juice.”

BUTTERMILK A VALUABLE FOOD

How little understood is the real value of good buttermilk as a health food. By **good** buttermilk I mean milk from which the butter fats have been extracted in manufacturing butter. This kind of buttermilk is a skimmed milk product. It not only furnishes much nourishment in an easily assimilable form, but it also contains myriads of good germs, as I may term them, whose duty it is to play havoc with many disease germs that seek to set up a diseased condition in the human body.

The casein of good buttermilk has been acted upon by lactic acid produced by these good germs and broken into millions of flocculent particles. These do not form curds in the stomach, and it is this fact that makes good buttermilk so digestible. It is easily disposed of by the gastric juices and but a slight task is imposed on the organs of assimilation and elimination.

The caloric value of buttermilk is comparatively low, being three hundred and twenty-four to the quart, consisting chiefly of carbohydrates and protein; but in addition, it contains in goodly quantities the salts of calcium, magnesium, potassium, sodium, phosphorus, sulphur and chlorine, with traces of iron.

Buttermilk is very helpful in cases of anemia because it cleans up the putrefactions of the intestines which cause absorption into the blood stream of toxins and provides fresh material out of which to create a new blood supply. Thus not only is good buttermilk an efficient enemy against disease germs in the human intestines, it is as well, a nutritious food—and a cheap food.

Good buttermilk alone makes an ideal noon luncheon. Served with whole wheat bread and butter it supplies the necessary elements to form an ideal meal. Steamed potatoes (with the jackets on) and served with a reasonable amount of butter and buttermilk, also constitute an ideal meal. If, however, one combines it with an otherwise heavy meal of meats and other solid foods, it will prove a menace to health.

It is well to know that one may prepare good buttermilk easily at home by skimming the cream off a bottle of pasteurized milk and then drop into the milk a buttermilk tablet. These tablets may be procured from almost any drug store, and are merely pure cultures, in dry form, of the living germs that change sweet milk into buttermilk. Buttermilk can be used as a diuretic, as a pronounced help in treating some forms of heart disease with edema, in renal disease and all inflammatory affections of the urinary passages. Besides, buttermilk is the cheapest protein food available.

CLEANSING THE ALIMENTARY CANAL

An excellent method of washing out and effectually cleansing the stomach, intestines and bowels, is to dissolve one-quarter teaspoonful of ordinary table salt in a glass of water and drink. After this drink two additional glasses of water, without the salt.

After drinking the water as directed, lie on the back and alternately distend and relax the walls of the stomach for at least half a minute. This has a rinsing effect in the stomach and its contents will be thoroughly agitated and cleansed by the strong movements of the abdominal muscles.

The churning effect will loosen the mucous from the lining of the stomach and within a half hour the mucous and undigested particles will be pressed from the stomach into the intestines by the contractions, leav-

ing the peptic glands cleansed and prepared to digest the food. The salt water will also have a soothing and healing effect on any catarrhal or ulcerated condition that may exist in the stomach and the solution will be carried onward by the peristaltic movement of the intestines, finally reaching the large bowel in from fifteen to thirty minutes.

This acts similar to an injection from below, but without its disagreeable features. The entire digestive tract will in this way undergo a thorough cleansing, the openings of the millions of intestinal glands are freed from obstructions, allowing a free flow of the intestinal juices. An internal bath of this nature used daily will act as an anti-ferment and disinfectant for the whole alimentary canal, and if persistently used will maintain until a ripe old age the appearance of those in the prime of life. The proper time for taking this form of internal bath is in the morning, from twenty to thirty minutes before the first meal of the day, and it should be followed regularly each day in all cases of stomach and bowel derangement.

BE KIND TO YOUR STOMACH

As Bernarr Macfadden has said, in Physical Culture:

“Some people treat the stomach as though it were a garbage pail. The complicated and indigestible mixtures that they force into this delicately constructed organ would tax the digestion of an ostrich.

“And then they have the incomprehensible audacity to wonder why they feel half ill all the time!

“The larger part of their energies is used for the exclusive purpose of eliminating the over-supply of food with which the stomach is loaded. They have no surplus energy for mental or other efforts. They can reasonably be termed ‘doped’ with food.”

We Eat Too Much Sugar

THE United States Department of Commerce recently compiled figures showing that the average consumption of sugar in the United States for the year ending June 30, 1917, was eighty-one pounds for each person, including men, women and children. These figures included cane sugar only. In addition to this should be considered the amount of sugar consumed in the form of glucose candies and corn and table syrup, which if added to the former figures would increase the average consumption of refined sugar very materially.

Now, as a matter of fact, there are large numbers of persons who consume little or no sugar—notably old men and women, babies, drinkers of alcoholic beverages, and the victims of diabetes, who are compelled to dispense with sugar. Thus, if we eliminate the portion of our population that consumes little or no sugar from our figures, it will be found that the average annual consumption of refined sugars in the United States is something like one hundred and fifty pounds per person among the real sugar eaters.

The figures compiled further show that the annual consumption of sugar averages in France, twenty-eight pounds, in Great Britain, thirty pounds, and in Germany, sixteen pounds. Now refined sugar supplies only heat to the body. It is fuel which is burned up in the tissues without supplying the salts, vitamins or building or repair material which is indispensable to life. The end products of refined sugar are acids; and when it is considered that we get from our refined breadstuffs and refined breakfast foods and our meats, immense quantities of acid-producing foods, can you wonder that this sugar intemperance is a really serious proposition for the American people, or that it is rapidly destroying our powers of resistance against those arch-enemies of mankind—tuberculosis, anemia, pneumonia, influenza, heart disease and diabetes?

An important point to consider in this connection is that the human body makes its own sugar—all that it needs and can profitably use—from non-sugar foods. Even though we were deprived of all forms of refined

sugar, we would still obtain all of the sugars necessary, from fruits, vegetables and cereals. Thus we are gorging ourselves at the present time on a refined product that is every day exacting its toll of teeth, blood, bone and tissue.

Years ago, when we were consuming unrefined sugars and unrefined grain products we ate more liberally of vegetables, fruits and green stuffs. From all of these were obtained the basic or alkaline substances required by the internal secretions, which keep the blood and other fluids of the body in a state of normal alkalinity.

The fact has been established that the blood cannot carry sugar in excess of one-tenth of one per cent of the total volume of blood. In order for more than this slight quantity to get into the blood circulation, some of the vital organs must first break down. Realizing this, it will readily be understood what unwarranted waste is represented by our immoderate consumption of sugar in this country.

The pancreas is an organ which, when we are in a state of health, acts as a barrier against more than the above stated proportion of sugar getting into the blood. When we consume the excess of sugar which we are now doing the pancreas is overloaded, so to speak, and the burden of disposing of this superfluous fuel falls to the lungs, kidneys, liver, skin and other glands. When the pancreas becomes diseased, all excess sugar is eliminated through the kidneys; and it is a significant fact that kidney disease is rapidly increasing in this country. One thing is certain, if we are to remedy this deplorable condition our appetites for refined sugar must be curbed; we must cut the consumption of one hundred and fifty pounds per person, per year, down to twenty-five or thirty if we're going to play safe.

Cane sugar, in many conditions, acts almost as a poison. It is a cause of serious diseases in children and infants, especially as eaten in the form of candy, owing to the excessive amount that is consumed in this form. Their digestive organs are much more sensitive to injury than those of adults.

In hyperacidity and hyperchlorhydria, in which an excess of acid is formed in the stomach, the condition is greatly aggravated by cane sugar, which usually produces pain and distress, heartburn, soreness in the mouth and sometimes gastritis. Not infrequently the condition is accompanied by vomiting and severe headache.

In a large proportion of chronic gastric diseases, catarrh of the stomach is present. Many of these cases result from a too liberal use of cane sugar. They are, therefore, aggravated by its use and it must be discarded from the diet before they can be cured. Catarrh of the stomach frequently extends into the intestines. This intestinal catarrh is likewise greatly aggravated by the use of cane sugar and other irritants. Chronic diarrhea often results from too free use of sugar, including confectionery and its various other forms of use. This will be found difficult of cure unless the irritating substance is discarded.

In dilated stomach cane sugar gives rise to irritating products. It often forms enormous quantities of gas, which further aggravate the condition. In diabetes, the victim has lost the power to oxidize or burn up sugar, therefore must carefully avoid its use, especially cane sugar, the assimilation of which is far more difficult than that of other sugars. Gout, chronic rheumatism, nervous headache, some forms of neurasthenia, eczema and other skin diseases, apoplexy and many other chronic diseases require total abstinence from cane sugar, or at least great restriction of its use. In ulcer of the stomach, it must be wholly discarded as it greatly aggravates the patient's sufferings.

I quote from a noted authority on foods as follows: "But, while we are lengthening life by modern sanitation and by saving infants under five years of age who, on account of their low vitality and general weakness, used to die, we are killing off men and women in the early forties with diabetes and obesity. Yet—it is now clear that in the development of these diseases our abnormal consumption of refined sugars and refined cereals is responsible in large measure.

"Sugar in the forms in which nature prepares it is an indispensable element of diet. Because it is soluble it is easily carried by the blood to

the muscle that needs it. But, as we consume it today, sugar is not a natural, but an artificial product. With the exception of honey there is no concentrated sugar in nature. Very dilute sugar exists in ripe fruits and vegetables, principally in their juices.

“Man has learned the trick of taking this dilute sugar and concentrating it, although nature teaches him that he should obtain the sugar he needs almost entirely from his ordinary fruit, vegetable and cereal foods, just as his ancestors did for thousands of years before him, and as animals have done since the beginning of time.

“Nature provides man with a ferment found in saliva. This ferment converts the starch of potatoes, wheat, corn, rice, oats, beets, carrots and all other starch-containing seeds and roots into sugar. By converting corn-starch through chemical treatment into glucose and by refining cane juice and beet juice, man serves notice upon his salivary glands that he has no use for them and shuns the assistance which nature asks them to render him.

“So, today, we consume millions of tons of concentrated candy, confections, syrups and sweets of all kinds. The inevitable result is a gradual breaking down of the body's ability to make use not only of concentrated sugar but of any kind of sugar and under the terrific strain the organs of control are finally smashed and in susceptible individual diseases, born of sugar and starch abuses, are permitted to break through and invade the body.

“It is not astonishing that we now have a half million people in this country condemned to premature death by sugar. It is not astonishing that since the abnormal increase in the consumption of sugar the last generation has recorded a fifty per cent increase in diabetic affections. . . . There is good reason to believe that honey does not conduct itself in the body like refined cane sugar or beet sugar, and it is probable that maple sugar differs in like manner. Davidoff observed that honey was tolerated by the diabetic to whom sugar in any other form was poison.”

MODERN METHODS OF COOKERY

The very finest of food may be spoiled by bad cooking. Through faulty preparation it may be robbed of its essentials to such an extent that by the time it reaches the table there is left little more than its skeleton. To serve the full purpose for which nature intended it, it must still retain its nutritive value intact when served.

It is the duty of every housewife, every cook and everyone intrusted with the preparation and cooking of food for human consumption, to see that the food is of good quality and cooked in the best possible manner, since good nutrition depends on these, and on perfect nutrition depends normal health.

Thanks to our modern cooking schools, our young girls are, many of them, acquiring a knowledge of cooking that will do much toward improving the physical and mental health of the coming generation. This branch of learning is of vital importance and should be made a compulsory part of every girl's education. The antiquated cooking methods in vogue in so many homes today, are those that have been handed down from mother to daughter for generations past and inefficiency is oftentimes perpetuated in this way.

Scientific methods of cooking, generally practiced, would work wonders in reducing the amount of sickness throughout our nation. Much disease would be prevented and the life period of mankind appreciably lengthened. And not only in cooking, but in food selection, is educational work of supreme importance, for the various refining and adulterating processes practiced by food factories are responsible for the undermining of bodily health as well as the faulty manner in which even the best of food is prepared and cooked in many homes.

The mineral salts contained in various foods are of the utmost importance, as I have stated elsewhere. They are necessary to life, and in cooking foods it is of supreme importance that these be saved. The organic salts of lime, iron, phosphorus, potassium and other minerals are indispensable. They are necessary to the building and maintenance of a normal condition of the blood, bone, brain and various organs of the body.

Scurvy, pellagra, beri-beri and such diseases are caused by an insufficiency of these mineral salts. And we have elsewhere seen how, by supplying these essential elements through vegetable and fruit juices, potato skin liquor, etc., deficiency ailments were quickly cured.

It is not surprising that persons who still follow antiquated methods of cooking are not particular to save the mineral salts. This is because until a comparatively recent date writers on food subjects considered the "ash" contents (mineral salts) of food so small as to be of little significance. We now know that on account of their percentage of the total bulk of food being so small, it is all the more important that we use every effort to preserve them.

In cooking vegetables, rice, etc., the water in which they have been boiled must be saved and served along with the remainder of the edible. In this way not only the most nutritive portion of the article is secured, but the food will have a far better flavor. It is a deplorable fact that but comparatively few cooks and housewives of America pay any attention to this important branch of cooking. They are not to be censured too strongly, however, since most of the cook books in common use are lacking in scientific methods of cookery.

Steaming is one of the very best methods of cooking. Not alone vegetables may be cooked by this method, but practically all other foods. It is not even necessary to go to the expense of securing the modern steam cooking utensils which are on the market—some of which are arranged with compartments for cooking a number of foods at once—as an ordinary sauce pan and a colander and cover will fill the bill very nicely.

One of the most desirable of all methods of cooking is with the double boiler. It is ideal for vegetables, as in this way they can be cooked in their own juices. It is not even necessary to add water as most vegetables contain an abundance of water; and with the double cooker there is no danger of burning or scorching the food, although a temperature of 212 degrees Fahrenheit is reached. Fruits of all kinds, berries, etc., are far better when cooked in this manner.

Another excellent method of cooking is with the fireless cooker. These may be procured at a moderate price and will prove highly satis-

factory as well as economical in the long run. The flavor and nutritive value of food are obtained to perfection in this method. When the fireless cooker is used the cooking is begun at the boiling point and continued over a comparatively long period at a gradually decreasing temperature. This is, in reality, the perfect method of cooking.

In cooking, whatever method is employed, it is best to let the food cook slowly over a considerable period of time, rather than to cook it rapidly. As little water as possible should be used. When the food is done there should not be an excess of liquid remaining. This liquid will be found the most delicious part of the food and should always be served with it.

Frying is a particularly bad method of cookery, owing to the indigestible nature of the food thus treated. Baking is an excellent method for meats, potatoes, squash, rutabagas and similar foods. Cereals should not be cooked quickly. They should be cooked in a double boiler, and from one to four hours of slow cooking is the best.

High Blood Pressure

POISONS circulating in the blood are the chief cause of high blood pressure. Their contact with the lining of the blood vessels results in the formation of excessive fibrous tissue. The evil effects are produced chiefly in the middle coat, to which the disease gradually extends. The hardened structures begin to contract, and later on these contracted arteries undergo a sort of chalky degeneration.

The smaller arteries are first affected, and on account of their contraction, insufficient blood is delivered to the parts they are supposed to supply. In the beginning of the disease the blood pressure rises only slightly above normal. As additional blood vessels become involved the pressure becomes greater because the area for circulation is diminished; this being nature's compensatory measure in endeavoring to distribute a proper amount of blood to the various organs of the body. In this connection it is interesting to note that the blood pressure is never higher than is required to secure the proper pressure for each organ.

There are many causes which are responsible for high blood pressure. Prominent among these are tea, which contains tannic acid, and coffee, containing caffein—both poisons. You will more readily grasp the significance of this statement when it is stated that caffein is a drug that is sometimes administered by doctors to patients whose blood pressure is low. Reliable authorities state that a cup of strong coffee contains as much as four grains of caffein, which by the way, is double the amount a doctor would give for a single dose; two or three grains being the usual amount given, and five grains an emergency dose. There is even twice as much poison in a cup of coffee as there is in a cup of beer.

The nicotine of tobacco is another fruitful cause of high blood pressure. It is claimed that one cigar will raise the blood pressure twenty points inside of a half hour. Alcohol produces deterioration of the muscles of the blood vessels and heart. This results in hardening of the arterial walls. Thus wine, beer, cider, etc., although their alcoholic con-

tent is comparatively small, are capable of great damage if taken in sufficient quantities, to say nothing of the danger they lay one liable to in their tendency to lead to stronger drink. Meat is another frequent cause of high blood pressure when eaten in too great quantities, on account of the uric acid it contains.

It may be stated that elasticity in a blood vessel is one of its most indispensable qualities. When a sclerotic blood vessel is placed under a microscope there is found a decay—a breaking down of the muscular and yellow elastic coats of the tubes. In their places we find fibrous tissue and lime. The heart pumps approximately four ounces of blood into the aortic “main” at each stroke and it is necessary that the arteries expand with each wave, thereby acting as shock absorbers for the delicate walls of the capillaries. Only in this way can the “spurts” be transformed into an even, steady flow.

When the resilient tissues in the walls of the smaller arteries have been transformed into tough, fibrous tissues, the capillaries are but half filled one moment and unduly filled the next. For this reason there is not a proper blood supply to the cells of the body. The absorption is incomplete and disrupted. The regions of the body they are intended to supply with the life-giving fluid are insufficiently nourished and as a result they gradually become wasted and shriveled up.

For example, when the brain or the kidneys or the liver have extra work to do they send out an emergency call for extra blood to enable them to perform it properly. But in their stiffened and hardened condition the arteries are powerless to respond to the call, because their elasticity and consequent power of adapting themselves to emergencies has been lost. What is the result? The victim of the hardened arteries gets easily out of breath, becomes easily excited or fatigued and stands any kind of sudden or violent shock badly. And when the excitement or shock is severe enough it frequently happens that the overtaxed artery, unable to withstand the strain of the extra rush of blood, ruptures under the strain. This is what is known as a stroke of apoplexy. It usually occurs in the brain and causes paralysis, although it may occur in any other part of the body.

It was formerly supposed that hardening of the arteries occurred only in old age—that it was distinctly an “old age” disease, one of the inevitable changes of advanced years. But as we learned more about it we found that it began to appear at any age after adult life was reached, and that it might occur in blood vessels supplying any region or organ of the body. For some time it was regarded as a sign of premature old age. This theory was responsible for the saying, “A man is as old as his arteries.”

Eventually we awoke to the fact that it is actually a disease, due to four or five principal causes. And we further became convinced that by the avoidance of these causes it could be prevented, or in any event its appearance be postponed to a good old age, except in some cases where family tendency and heredity play a part.

The symptoms of arteriosclerosis are many in number and of great variety. When it occurs in the blood vessels supplying the kidneys it produces one of the most serious forms of Bright’s disease, known as chronic nephritis. If involving the liver, one of the most obstinate forms of dropsy is developed. In cases where the pancreas is involved, chronic dyspepsia or diabetes, is the result. If it occurs in the arteries leading to the brain, a paralytic stroke or softening of the brain results. When the condition is general throughout the body, a gradual degeneration, with dilation and eventual failure of the heart muscles is experienced. This is on account of the greater resistance they are compelled to overcome in driving the blood through non-elastic tubes, as has been heretofore explained.

If the vessels that supply the lungs become hardened and shrunk, chronic purulent bronchitis, asthma, and eventually senile pneumonia will result. To sum it all up, it is a safe assertion that arteriosclerosis plays an important part in nearly fifty per cent of the deaths after the age of forty-five has been reached, yet in all these cases the causes which are responsible for it could, to a large extent, be avoided.

As before stated, there are four or five principal causes for this condition. Prominent among these are: The infectious diseases of

childhood; the infections of young adult life, such as rheumatism, typhoid and tuberculosis; alcoholic drinks and other forms of dissipation, gonorrhea, syphilis; muscular overstrain, overwork and chronic fatigue. In any event it is caused from a toxin, which may be either the toxin of alcohol, the toxin of fatigue or the toxin of infectious disease.

Arteriosclerosis was not recognized as a distinct and separate disease in itself, even by physicians, until some thirty or forty years ago. Therefore statistics purporting to show the degree of its prevalence more than twenty years ago would be of no value by way of comparison in an effort to determine the correctness of the statement that it is rapidly increasing. It seems a much more plausible fact that the increasing recognition of the disease has merely been mistaken for the alleged increase of arteriosclerosis.

One thing is certain that it is neither a comparatively new disease nor a special penalty of modern civilization, as has been widely claimed. Perfect specimens of the change in the arteries are to be found in the Egyptian mummies of the fifth dynasty, of the twelfth century before Christ. Furthermore, it occurs earliest and in the severest forms among semi-civilized and barbarous peoples, and among the lowest of the social classes in civilized countries, at the present day. Therefore, even though it may be on the increase, we have no evidence at hand to either substantiate or refute the claim.

Among the best preventives of arteriosclerosis are properly selected food, fresh air and outdoor exercises in moderation. Poor or improperly selected food and overwork are perhaps the most frequent cause of the disease, as hospital studies have shown. The person in whom arteriosclerosis has developed may expect to check further progress of the disease by careful attention to the diet, avoiding overstrain and taking a reasonable amount of moderate exercise in the open air. Plenty of milk, butter, ripe fruits and fresh vegetables should be included in the diet. Care must be taken to avoid all poisoning from pus pockets, particularly at the roots of teeth, in the nose and tonsils.

A persistent high blood pressure wears out the heart by compelling it to do an extraordinary amount of work, thereby leading to dilation of

the heart and heart failure. When the blood pressure is raised to two hundred the heart is compelled to do more than twice the amount of work necessary at one hundred. This wears out the heart rapidly. It is common to find the heart, kidneys and blood vessels simultaneously diseased, so-called cardio-vascular-renal disease. In such cases prompt and persistent attention is necessary.

KIDNEYS FILTRATION PLANT OF BODY

The blood is the life stream, in fact the life giver of the human body. It supplies every organ with life. It feeds and sustains the life of the bones, tissues, muscles and flesh. Without it life would be impossible, even for the smallest fraction of a second. And no matter what disease there may be in the body, it is carried in the blood.

When we realize the absolute necessity of the blood in maintaining life it will be easy to understand the importance of the kidneys, through which the blood is required to filter continuously, day and night. Every drop of blood in one's body passes through the kidneys once in every seven minutes. Just as water is filtered and the impure properties removed, so is the blood filtered through the kidneys, whereby the poisonous waste matter is extracted and passed off through the urine, leaving the blood purified to continue its work of feeding and revitalizing the various parts and tissues of the body.

This filtering process takes care of the blood's impurities in a satisfactory manner until the blood becomes overcharged with toxins from overeating, or from wrong proportions or combinations of foods. Then the kidneys have more than they can do. They begin to accumulate the poisonous matter in greater quantities than they can eliminate. A portion of it remains in the blood and is carried back into the system to contaminate heretofore healthy flesh and tissue. Rheumatism and various other diseases then manifest themselves.

Another portion of this toxin remains in the kidneys, causing them to weaken and finally break down under the added strain. Kidney troubles will then develop, which if not corrected in time by a revised diet, may develop into serious consequences. In this connection it is note-

worthy that physicians admit that Bright's disease claims more victims annually than any other disease outside of tuberculosis. And it is safe to assume that every case of Bright's disease could have been avoided by resorting to a proper menu in time.

A most excellent precaution for everyone to observe is to have an analysis of the urine made every three or four months by a reputable physician, or by a bureau that makes a specialty of it. (There are a number of the latter—making a nominal yearly charge for the service.) This, if begun in time and continued regularly, will give timely warning of encroaching kidney disorders, and if a corrective diet is then adopted serious and fatal consequences may be avoided.

APPENDIX AN IMPORTANT ORGAN

It is estimated that perhaps more than a million persons have had the appendix removed either by a primary operation, or incidental to some other operation. Each of these persons has lost a valuable and necessary organ, although not all authorities may agree with this statement. It is claimed that a great many surgeons have for years made removal of the appendix a part of the regular routine in all of their abdominal operations.

Many claim the appendix to be a useless appendage, but such is not the case. It is a highly important organ of the human body; and as pointed out by Andrews and others some years ago, it constitutes an important part of the lubricating apparatus of the colon. Its loss greatly detracts from the proper functioning of the colon and constipation follows as an almost inevitable result.

From the appendix there is emitted into the ascending colon a film of mucus which spreads over the contents, oiling it, so to speak, and thereby allowing it to slide along easily over the mucus membrane. This prevents the clogging which would otherwise take place in the pockets and folds of the colon. Mucus is also supplied along the lining of the colon by numerous small glands; yet the appendix serves as the main lubricating system, the mucus being stored up in it and then released

from it, in the quantities and at the times needed, to facilitate the moving along of the fecal matter.

There are, of course, cases where removal of the appendix is positively necessary; as, where it has become diseased to such an extent that repair is impossible. But the majority of removals are unwarranted and every case of diseased appendix can, if taken in time, be cured by a proper diet, in conjunction with the judicious use of enemas. The regular application of my Mechanical Fat Remover will have a decidedly beneficial effect in such cases by stimulating the muscular movements in the intestinal tract, thereby assisting in the removal of the obstruction which is the fundamental cause of the trouble.

HEART DISEASE

Refined food and heart disease are brothers in crime, so to speak. They nearly always go hand in hand. Insurance statistics show that heart disease is constantly on the increase in the United States, and it will continue to be just so long as we persist in a diet that is deficient in the vitally necessary mineral salts. The heart is always dilated following an exclusive, prolonged diet of refined food.

According to McCann: "In the food deficiency disease described as 'beri-beri' the heart is always involved, just as it was involved aboard the Kron Prinz Wilhelm. In the same disease which confused commentators, sometimes called 'acidosis,' sometimes 'pellagra,' sometimes 'edema,' sometimes 'neuritis,' sometimes 'general breakdown,' the heart is always involved for the same reasons and from the same causes.

"It is peculiarly noteworthy that the recorded increase in 'heart disease' runs parallel with the system of milling introduced in the United States about 1879. Numerous instances, some of which we shall examine, are on record, indicating that a deficiency of iron, phosphorus, potassium, calcium and the other mineral salts, colloids and vitamins always associated with these salts in unmanipulated milk, butterfat, cereals, fresh vegetables, greens and fruits leads to numerous forms of physical disorder in which 'heart trouble' is one of the constant factors.

“Many cases are on record proving that where offsetting foods are entirely missing from a refined food diet, the heart becomes involved in from forty to sixty days. Many other instances are on record showing that where offsetting foods are consumed to an extent sufficient to retard the progress of mineral starvation, the development of the disease is delayed accordingly.”

RECOMMENDED AND PROHIBITED FOODS

In the Commoner Chronic Ailments

BRIGHT'S DISEASE

May Take

SOUPS. Weak broths with rice or barley, thin vegetable soups.

FISH. Fresh fish, boiled or broiled, raw oysters, raw clams.

MEATS. Beef, mutton, lamb, poultry, all sparingly.

FARINACEOUS. Hominy, oatmeal, wheaten grits, rice, with milk, sparingly, stale bread, whole wheat bread, toast, milk toast, biscuits, macaroni.

VEGETABLES. Potatoes, peas, beans, spinach, cabbage, cauliflower, tomatoes, onions, lettuce, watercress, mushrooms.

DESSERTS. Rice and milk puddings, stewed apples, stewed pears, berries.

FRUITS. Ripe apples, pears, grapes, berries.

FLUIDS. Pure water, fresh buttermilk, Bulgarian sour milk, milk with hot water, equal parts, whey.

Must Not Take

Strong meat broths and extracts, fried fish, pork, corned beef, heavy bread, batter cakes, asparagus, celery, hashes, stews, gravies, strong condiments, such as curry, pepper, mustard, radish, etc.; cakes, pastry, ice cream, malt or spirituous liquors, cranberries, fruits with kernels.

DIABETES

May Take

SOUPS. Soups or broths of beef, chicken, mutton, veal, oysters, clams, terrapin or turtle (not thickened with any farinaceous substances), beef tea.

FISH. Shell fish and all kinds of fish, fresh, salted, dried, pickled, or otherwise preserved (no dressing containing flour).

EGGS. In any way most acceptable.

MEATS. Fat beef, mutton, ham or bacon, poultry, sweetbreads, calf's head, sausage, kidneys, pig's feet, tongue, tripe (all cooked free of flour, potatoes, bread, or crackers).

FARINACEOUS. Gluten porridge, gluten bread, gluten gems, gluten biscuits, gluten wafers, gluten griddle cakes, almond bread or cakes, bran bread or cakes.

VEGETABLES. String beans, spinach, beet-tops, chicory, kale, lettuce plain or dressed with oil or lemon juice, cucumbers, onions, tomatoes, mushrooms, asparagus, oyster plant, celery, dandelions, cresses, radishes, pickles, olives.

DESSERTS. Custards, jellies, creams (all without sugar); walnuts, almonds, filberts, Brazil nuts, cocoanuts, pecans.

FLUIDS. Pure water, Bulgarian sour milk, lemonade, lemon juice (no sugar).

Must Not Take

Liver, sugars, sweets or starches of any kind, wheaten bread or biscuits, corn bread, oatmeal, barley, rice, rye bread, arrowroot, sago, macaroni, tapioca, vermicelli, potatoes, parsnips, beets, turnips, peas, carrots, melons, fruits, puddings, pastry, pies, ices, honey, jams, sweet or sparkling wines, cordials, cider, porter lager, chestnuts, peanuts.

DIARRHEA.

May Take

SOUPS. Milk soup well boiled, clam juice, beef tea.

MEATS. Scraped fresh beef or mutton well broiled, sweetbread, beef juice from freshly broiled steak (all sparingly).

EGGS. Lightly boiled or poached on dry toast, boiled white of egg.

FARINACEOUS. Rice, sago, macaroni, tapioca, arrowroot, dry toast, milk toast, toasted crackers.

DESSERTS. Milk puddings, plain, with sago, rice, tapioca or arrowroot (no sugar).

FLUIDS. Tea, toast water, boiled milk.

Must Not Take

Oatmeal, wheaten grits, fresh breads, rich soups, vegetables, fried foods, fish, salt meats, lamb, veal, pork, brown or graham bread, fruits, nuts, pies, pastry, ice cream, ice water, sugars, sweets, custards, malt liquors, sweet wines, iced drinks.

LIVER TROUBLES**May Take**

SOUPS. Thin vegetable soups with a little bread or cracker, light broths, oyster broth.

FISH. Boiled fresh cod, bass, sole or white fish, raw oysters, soft part.

MEATS. Tender lean mutton, lamb, chicken, sweetbread, all sparingly.

FARINACEOUS. Oatmeal, hominy, tapioca, sago, arrowroot, all well-cooked, whole wheat bread, graham bread, dry toast, crackers, zwieback, all sparingly.

VEGETABLES. Nearly all fresh vegetables, well-baked or boiled potato once a day, dandelions, green salads with French dressing.

DESSERTS. Plain milk puddings of tapioca, sago or arrowroot; prunes, uncooked, soaked in water for 24 hours.

FRUITS. Fresh ripe peaches, pears, grapes, strawberries, if agreeable; ripe, tender plums.

FLUIDS. Hot water, pure water, Bulgarian sour milk or buttermilk.

Must Not Take

Strong soups, concentrated meat extracts, rich made dishes of any kind, hot breads, preserved fish or meats, red meats, curries, fats, sugar, herrings, eels, salmon, mackerel, sweets, creams, dried fruits, nuts, pies, pastry, cakes, peppers, spices, mustards, radish, horseradish, raw onions, water cress, celery, malt liquors, sweet wines, champagne.

PHTHISIS**May Take**

SOUPS. Turtle soup, oyster soup, clam or chicken broth, puree of barley, rice, peas, beans, cream of celery or tomato, whole beef tea, peptonised milk gruel.

FISH. All kinds of fresh fish, boiled, broiled or baked, oysters and clams raw (soft portions), also roasted or steamed or broiled.

MEATS. Rare roast beef or mutton, lamb chops, tender steaks, hamburger steak (rare), ham, fat bacon, sweetbread, poultry, raw pulped mutton or beef (scraped, pounded, put through sieve), or meat juice from slightly broiled steak.

EGGS. Raw, soft boiled, poached, any way acceptable except fried or hard boiled.

FARINACEOUS. Oatmeal, wheaten grits, cornmeal mush, hominy, rice, with milk or cream, whole wheat bread, corn bread, milk toast, biscuits, muffins, gems, etc.

VEGETABLES. Nearly all if non-irritating, potatoes, baked, boiled, creamed; fresh green peas, beans, spinach, onions, asparagus, tomatoes, all well-cooked, preferably steamed, to avoid loss of salts in boiling, lettuce, celery. Cream, butter, best olive oil may be used freely if agreeable.

FRUITS. Fresh ripe fruits as desserts, or taken in morning or early part of the day; grapes, peaches, pears, etc.

FLUIDS. Fresh milk, freely, sipped slowly, taken plain, with cream added; buttermilk, Bulgarian sour milk, cocoa, pure water.

Must Not Take

Fried foods, salt fish, hashes, gravies, highly seasoned dishes, veal, pork, carrots, parsnips, cabbage, beets, turnips, cucumbers, macaroni, spaghetti, sweets, pies, pastry, sweet wines.

FRESH AIR AND SUNSHINE

“Hardly less essential than sleep is sunshine and the open air. There are some men and women who do not manage in six months to be out in the open sunshine for as much as an hour.

“These same individuals have been taught that the energy conveyed to man and to all animal and plant life by the sun is what makes for vitality, health and vigor, yet they ignore this fact, living on merely as they and their fathers have been accustomed to do, namely, indoors, in shadows and half-lights.

“Sunshine helps to remove and burn up bacteria, corruption, decay and disease, and to restore lost force, energy and power to animal and plant tissue. Therefore, to remain young in spirit as well as smooth of brow, fare you forth as much as you can in the sunshine of the fresh outdoors.”—Dr. Leonard Keene Hirshberg.

Some Rules to Observe

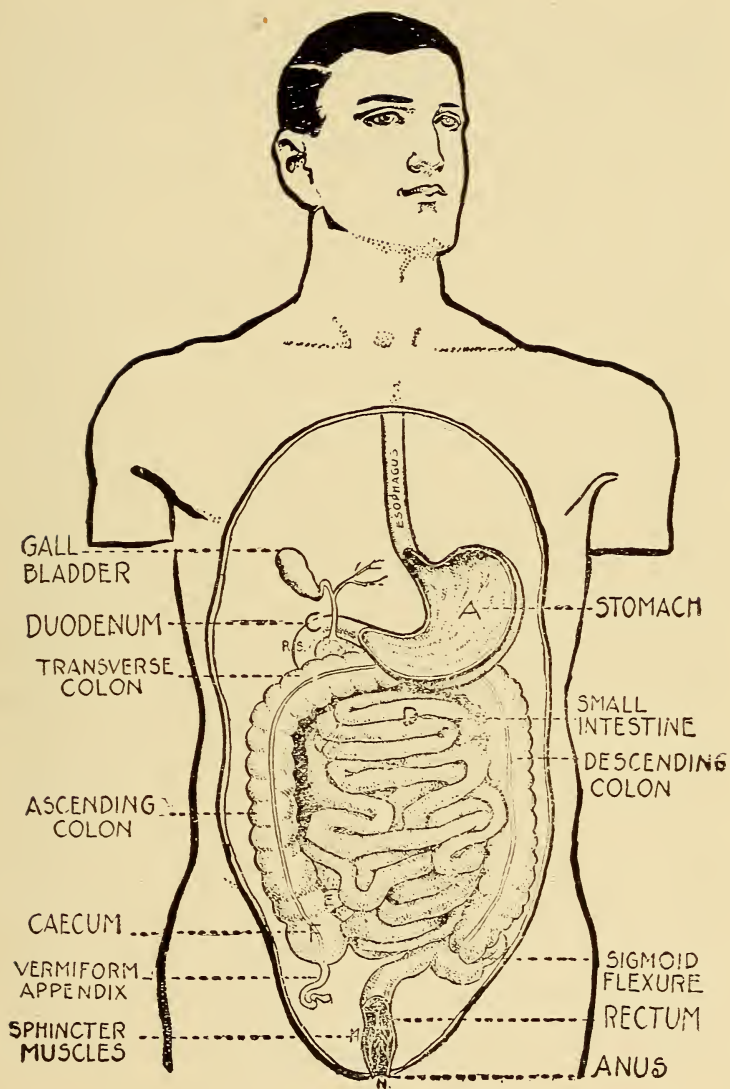
COOKED fruit (sugared and creamed), jellies, preserves, butters, marmalades, etc., should not be eaten with any kind of bread, toast, cereals or starch in any form.

It is all right to eat fresh fruits with starchy foods, but it is best to eat only well ripened and sweet or sub-acid fruits. When there is severe irritation of the stomach starch and fruits should not be combined. In fact, the use of all starchy food, such as grain and potatoes, should be discontinued until the irritated condition has disappeared.

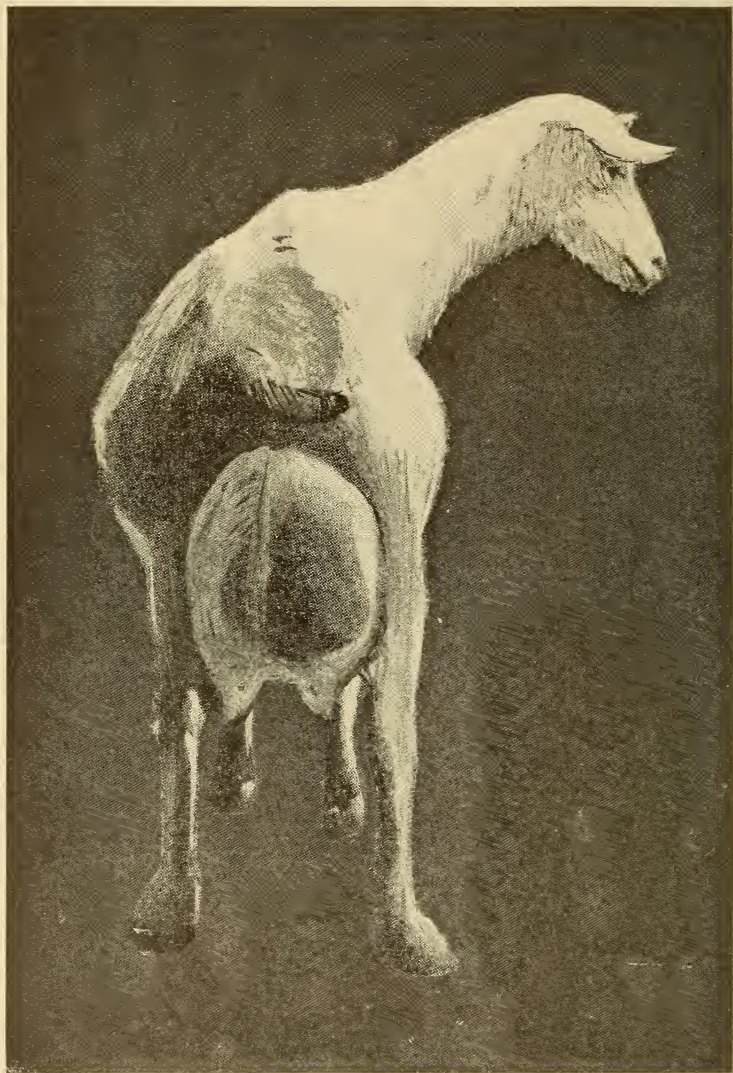
Canned goods should not be used when it is possible to secure fresh foods. The same is true of smoked and cured meats, excepting bacon, which may be used with starchy foods, being mostly fat, but not proteid as other meats.

Never eat between meals if you expect to keep your state of health at its best. Don't eat unless you are hungry, and remember that appetite and hunger are two vastly different things. Don't eat without a keen relish, and not then unless perfect comfort has been experienced since your previous meal.

Stewed tomatoes cause a great deal of discomfort in many persons. This comes from eating them with starchy foods, which should not be done. Raw tomatoes may be taken with starchy foods.



THE ALIMENTARY TRACT



NATURE'S MOST WONDERFUL LABORATORY

The Modern Fountain of Youth

THE goat is nature's most wonderful laboratory. She takes the browse of the pasture, the tender grasses and roughage of the field, and by her magic art converts them into mankind's most palatable and highly nutritious food. In her milk is embodied that vital food element so essential to human life, which cannot be found elsewhere.

Verily, the goat is the twentieth century Fountain of Youth, that mysterious something which men have eagerly sought for centuries past. Her milk is more valuable than gold and precious stones; for it brings roses to the cheeks and the glow of health-light to the eyes of languished child and adult. Her milk is the nearest approach to mother's milk, with its life-giving properties that make for the highest mental, moral and physical development of the human race.

Let all, therefore, do their utmost toward the up-building of the goat industry in this country.

Healthfulness of Goats' Milk

ONE of the great problems confronting the American people today is that of getting good, pure milk. Absolutely pure milk is one of the most wholesome of foods. It is man's first food, and he is more or less dependent upon it all through life. On account of the great liability to infection among cows, there is the ever-present danger of unwholesome milk, when obtained from this source.

It is a fact, known to all who have made a study of the subject, that goats are practically immune from all of the infectious diseases to which cows are subject. Furthermore, goats' milk contains about twice the nutriment of that of cows. And herein lies the solution of the perplexing milk problem. That is why I advise the use of goats' milk in all cases where it is possible to procure it, and why the unbiased milk authorities in this and other countries strongly recommend it in preference to cows' milk.

All prominent foreign writers agree as to the value of goats' milk, not only for invalids and children, but as well for cooking and table use. By many of them it is regarded as highly beneficial when taken medicinally for certain diseases. It is a well established fact that goats' milk is at all times free from the germs of tuberculosis. It is especially adapted to the use of infants on account of its similarity in composition to mothers' milk, and we have on record numerous instances where success was met with in its use in the cases of children who were rapidly wasting away. It is used extensively in foreign hospitals for patients suffering from tuberculosis and stomach troubles.

The milk of goats is very easily digested and has a most delicious, creamlike taste. The fat globules are very small and the cream rises slowly on the milk. A misconception exists among many persons as to the flavor of goats' milk, because they have often heard that it has a strong, acrid taste. This is a mistaken idea, however, for when proper cleanliness in milking is observed and the goats are correctly fed, their

milk is far superior in taste to that obtained from cows. If the animal has been properly fed and the milk is drawn in a perfectly clean state and kept in a clean place, it is a most delicious food.

It is a well understood fact that wrong feeding of cows will result in badly flavored milk. The same is true of goats. The idea that goats' milk has a disagreeable flavor perhaps originated with persons who drank the milk in certain foreign countries, where the goats are allowed to roam at will, feeding upon such weeds and plants and generally bad foods as they are able to secure. The milk from animals fed in this manner would most naturally be of bad flavor. The same result would be experienced with the milk from cows that were forced to feed in this manner. As indicative of the high quality and delightful flavor of goats' milk, a number of prominent authorities are here quoted.

"Many persons are impressed with the idea that this (goats') milk has a peculiar flavor, but this impression is entirely erroneous, for when drawn clean from an animal in health it resembles cow's milk, both in taste and appearance, the only difference being that it is richer, thicker, and slightly sweeter, containing as it does a larger proportion of sugar and cream and less water."—Pegler.

"The milk from goats fed upon what an English meadow or roadside yields has no flavor to distinguish it from cow's milk, except, perhaps, its extra sweetness and creaminess; in short it is only distinguishable by its superiority."—Hook.

"An after taste of goat's milk, according to statements of veterinarians, should not exist, and if any such taste or smell exists it must be traced to unclean stables or bad feed. Even cow's milk very frequently smells badly under these conditions."—Milch-Zeitung.

"It (the milk) possesses a singular but not unpleasant sharp taste, the strength of which varies with the feeding and keeping. The better the feed, the cleaner the bedding, the better ventilated the stall, and the more painstaking care, just so much more pleasing will be the taste of the milk. The goatish taste is always to be attributed to the lack of attention to one or more of these points."—Dettweiler.

“Innoxious, uninfectious, sanitary nourishment for the infant, the child, the invalid, and the aged, has been until recently a reflective problem for the medical man as well as the layman. All the different stages of our existence depend not only upon nourishment, harmless in character, but its perfect assimilation for best results. The ideal food for our purpose is human milk, from healthy, unimpregnated mothers. Its only substitute of equal value is now offered and can be supplied from matured, healthy, unimpregnated milch goats. It is the only and reliable wholesome milk in reach. The statistics of the world are against the use of cow’s milk today for food in the above mentioned classes.

“The fourth annual report of the District of Columbia Association for the Prevention of Tuberculosis, and this is from the most reliable and highest source of information in the United States, tells us that one-fourth of all cases of tuberculosis among children under sixteen years of age, and one-eighth of all fatal cases under five years of age, are due to bovine tuberculosis. And among children fed exclusively on cow’s milk, nine out of ten cases of fatal tuberculosis revealed that five, or 55 per cent, were due to bovine infection. The most noted authorities of Europe and America agree that the qualities of goats’ milk lie in its chemical composition, its immunity from the danger of carrying the germs of tuberculosis make it the “*ne plus ultra*” of all foods. As a prophecy, remember that the goat will be the foster mother and the wet nurse of generations yet unborn.”—Louis G. Knox, M.D., D.V.S.

A prominent Buffalo physician says: “I take great pleasure in commending goats’ milk for the infant where other foods fail. I have resorted to goats’ milk feeding in quite a few cases, and only recently have fed two premature (seven months gestation) infants on this food with the most flattering results.”

A happy mother, Mrs. George Hoffman, wrote: “We cannot speak too highly of the use of goats’ milk for premature infants. Our boy at one month old weighed $3\frac{3}{4}$ pounds, and at three months (after using the goats’ milk from the McKeand farm) weighed eight pounds.”

The fact that the goat is immune from the germs of tuberculosis seems to have been quite definitely established. An eminent physician

of Paris reported that he had inoculated goats with the virus of tuberculosis and that none had exhibited any indications of having contracted the disease. He further reported that he had never found infection of any similar malady in the goat family. It is now conceded by the most eminent writers that milch goats are entirely free from liability to any of the diseases prevalent among other farm animals, except foot and mouth diseases.

In many foreign countries today the goat is the chief source of sustenance among the inhabitants. In the United States the goat industry is of comparatively recent date. One of the reasons for this has been the unwillingness of people of foreign countries to dispose of their best milk-producing stock. However, some very excellent strains are now being developed in this country and the goat industry in the United States is rapidly attaining the place of prominence it so richly deserves. Physicians are doing much toward helping along the development of this industry, for they have found goats' milk is invaluable in the treatment of invalids and babies, where nothing else would agree with them.

Milch goats adapt themselves very readily to climatic conditions in the United States. The Swiss Toggenburgs, Swiss Saanen, Spanish Maltese and Nubian Cross bred goats are among those which are very profitably bred in this country. These do as well as the Angora in this country and are proving much more profitable. A government milch goat farm was located in 1909 a few miles from Washington, D. C. The idea was to study the possibility of producing useful milch goats from native stock, using sires of imported blood. Over five pounds of milk a day, on an average, has been realized from a single doe on this farm.

Goats' milk possesses greater food value than cows' milk, as it contains a greater amount of proteid. Babies that are bottle-fed on cows' milk are as a rule, underfed, owing to the lack of proteid, because undiluted cows' milk cannot be digested properly by an infant under ten months of age. In "The Wasting Diseases of Infants and Children," by Dr. Eustace Smith, we find the following: "With some children, in spite of all possible precautions, cows' milk, however carefully it may be prepared and administered cannot be digested. . . . In such cases, if

there are objections to a wet nurse, recourse must be had to milk of some other animal, and preference should be given to a milk which contains a smaller proportion of casein than found in the milk of the cow, such as goats' milk."

An excellent rule for modifying goats' milk for infants is the following, based on a 5 per cent fat basis: First month—goats' milk, $\frac{1}{2}$ ounce; boiled water, $\frac{1}{2}$ ounce; lime water, $\frac{1}{4}$ to $\frac{1}{2}$ ounce. Second month—goats' milk, $1\frac{1}{2}$ ounces; boiled water, $1\frac{1}{2}$ ounces; Mead's Defti Maltose, 1 teaspoonful. Third month—goats' milk, 3 ounces; boiled water, 1 ounce; Mead's malt sugar, $\frac{1}{2}$ teaspoonful. Fourth month—goats' milk, 5 ounces; boiled water sufficient to make 5 per cent fats. During the first month, gradually diminish the amount of lime water until second month is reached. Each month, after the fourth month, gradually increase the amount of the feeding one-half to one ounce a month until eight ounces is reached. This quantity will satisfy the child until the twelfth month is reached.

The above modifying rule is given by the eminent authority, Charles E. Ide, M.D., who says: "My experience has been so satisfactory in using goats' milk that I want to recommend it generally to the medical profession."

Dr. Demande, director of the sanitarium at Haelbert, Belgium, has been quoted as follows: "It is not only that among the 300,000 goats of Belgium there is probably not one affected with tuberculosis, while among the cows there might be anything between 50 per cent and 75 per cent of animals suffering or showing signs of this disease. Goats' milk being wholesome and beyond suspicion, there is no need to sterilize it. It may be taken raw, still palpitating with those mysterious forces which constitute life, whilst cows' milk, which needs to be boiled, sterilized—killed, in fact—is a congealed, defunct liquid."

"D'Escherisch, who has studied comparatively fresh milk and sterilized milk, has shown that milk is not merely a nutritive liquid, but that it is clear that children that are delicate have need of the ferments contained in raw milk, and are quite incapable of digesting milk rendered inert by sterilization."

Dr. Demande has reported a number of cases that have come under his personal observation, in which children who seemed doomed to an early death while being fed on cows' milk, grew up strong and healthy by the use of goats' milk.

An interesting case was reported by G. H. Wickersham of Wichita, Kansas, as follows: "It is not necessary to go outside of one's neighborhood to learn of many cases of malnutrition. A recent case coming under the writer's observation is typical. A four months' old baby could not keep cows' milk, modified cows' milk or any of the commercial baby foods on its stomach. It became very weak and its life was despaired of.

"As a last resort it was sent to a baby hospital where a wet nurse was available, but the baby continued to fail and after the baby had lost six ounces in weight it was sent home as hopeless. The original doctor gave the case up. Another doctor recommended trying goats' milk. A very limited amount of goats' milk was obtained, and, strange as it may seem, the baby retained it, although it was fed without diluting or modifying. In two days it had gained two ounces and in five days, five ounces. The baby has now gained a pound. An attempt was made to change to cows' milk, because the available supply of goats' milk was insufficient, but the baby could not retain it."

When the profitable nature of goat raising and the great economy in keeping them for milch purposes becomes more generally known in this country, this industry will experience rapid forward strides. It has been convincingly demonstrated that seven or eight goats can be kept on the same quantity of feed that one cow will require. Each goat will give from two to five quarts of very fine, rich milk per day, each quart of which is equal in richness to two quarts of average cows' milk.

The goat is the ideal milk producing animal for the family of moderate means and the practicability of raising them is not confined to the farm, or to homes having large acreage. Persons of modest means, living in the cities, will find the plan of keeping them in the back yards entirely feasible. Enough material can be provided on a city lot to feed a couple of good milch goats practically the year around. They should have a good variety of grass and vegetation of various descriptions.

A good, dry shelter should be provided for them. While they will do well on almost any kind of vegetation, being especially fond of fallen leaves and weeds of all kinds, yet they must not be permitted to subsist entirely on a diet of weeds or other rank herbage, or the milk will have an unpleasant taste, just the same as cows' milk would be tainted by a similar exclusive diet. If they are not being used for milking purposes they can be permitted to eat whatever they like. By properly regulating the birth of the kids, two goats will provide the average family with milk throughout the entire year.

"As to the question of human nourishment, the goat occupies an important position. It yields a wholesome nourishment for the family, serves as a useful and agreeable occupation for wife and children, and awakens in its owner a desire for industry and a spirit of frugality. So long as the working man is happy in the possession of a business, has a small bit of ground to call his own, and a profitable domestic animal, just so long will he be an opponent of social strife; a careful provider for his family, and an adherent of some recognized creed."—Hilpert.

"In Saxony the goat plays an important role as the source of the milk of the household; likewise that the homes that are here under consideration belong to that class of people who are without much means. Especially in the industrial districts of the mountains, with a preponderance of the smaller manufactories, the goat is the supporter of the family—in a broad sense, of the people among which it finds its manifold uses. In this way it comes about that goats' milk is such a universally established food material and one of which the people have become so fond, that they will pay the same price (or in many places even a pfenning higher price) for it than for cows' milk, which latter serves to help out when there is a scarcity of goats' milk. The reason for this may be found in the higher nutritive value of goats' milk, and the assertion is often made here that anyone who has become accustomed to the use of goats' milk for coffee feels it a degradation if he is compelled to be content with cows' milk in its stead, which is not so pleasant to the taste and is poorer in fat than goats' milk. But the goat is beginning to rise in prominence and gain in numbers in highly developed, thickly settled districts where the people are more prosperous."—Dettweiler.



“HOOSIER BOY”

The pride of the Saanen herd of the Dr. Loughney Goat Ranch, near Seattle, Wash. One of the finest pure-bred, naturally hornless Saanen bucks in America. Registration number 1,565, A. M. G. R. A. Sire, Franz Rex, number 912. Dam, Swiss Maid, number 375. See page 172.



THE BLESSINGS OF HEALTHY CHILDHOOD

Feeding and Care of Children

IN the milk of all healthy mammals there is present a certain prophylactic quality which protects the nursing young, and affords the best preventive of stomach and bowel diseases. There are properties present in the milk and blood of animals which have the power to destroy bacteria. These properties in milk are not destroyed by digestion, unless the milk is boiled, in which case it loses this natural protective property.

The oldtime theory that a pregnant woman should "eat for two" has been exploded long ago. "Eating for two," in this case amounts to nothing more nor less than "overeating." And overeating is certain to produce enervation on account of the faulty elimination it establishes, thereby preventing the various organs from functioning properly. "Eating for two" is, when viewed from any angle, a costly procedure for the expectant mother, exacting its toll in long, tedious and painful labors, and even in life itself. Or the foundation may be thereby laid for countless future troubles, such as tumors, cancers, etc.

What foods should be eaten during pregnancy? For breakfast each day nothing but fresh, uncooked fruit, such as apples, etc., in moderate quantities. In winter weather small quantities of raisins, figs, dates, etc., may be added. For lunch, well toasted whole wheat bread and butter, followed by a glass of sweet milk or buttermilk. For dinner, any kind of fresh meat (chicken or lamb preferred) in limited quantity, with one or more cooked, non-starchy vegetables and a combination salad.

Nuts, milk, cheese or other proteids may be substituted for meat in the above dinner list. Occasionally omit both the meat and proteids mentioned for the dinner menu and substitute baked potatoes, navy beans, dried peas, corn bread or other starchy foods. These starchy foods may be combined with the non-starchy vegetables and salads. The salads should be dressed with salt and olive oil. There must be no eating between meals, and the prospective mother's uppermost thought as regards diet should be to eat moderately and in a manner to insure perfect com-

fort and health, which will, of course, mean freedom from indigestion, constipation and the accompanying disturbances.

After childbirth, if the mother has been much exhausted, she should eat nothing for the first twenty-four hours. If, however, there is a desire for food and it can be taken without discomfort, a little buttermilk or grape juice or a baked apple may be served within a few hours after the child is born. Fresh milk or buttermilk and fresh fruit (not tart) may be taken for breakfast, luncheon and dinner for the first three or four days. After this she may eat about the same menus she was accustomed to before confinement, except in slightly smaller quantities.

The same precautions against overeating should be observed during the nursing period as during pregnancy, since the child will be affected during this period by whatever tends to disturb the health of the mother. Anything taken by the mother with a view to increasing the flow of milk, such as beer, etc., will change the quality of the milk, and should, therefore, be avoided.

The expectant mother should not only avoid overeating, but should at all times strive to be cheerful and happy and take plenty of open-air exercise. The appetite for all kinds of soft drinks, etc., should be curbed. Likewise, sex life should be controlled. See to it that the bowels move every day. This may be accomplished by laxative foods, such as figs, prunes, pears, spinach, etc. Drink plenty of water.

Daily sponge baths should be taken, being careful to apply plenty of friction, but cold baths should be avoided. Abdominal rubbing will strengthen the muscles. If leucorrhea is present, douches of warm salt water should be taken daily, using a tablespoonful of salt to two quarts of water. Avoid corsets.

Constant chilling will kill the very young child, no matter how carefully its wants may be looked after otherwise. Chilling is the cause of thousands of children's deaths annually, although often differently diagnosed. They must be guarded continuously against chilling of the extremities. To thrive they must be kept warm, not only part of the time, but all the time. At the same time they must not be overheated, and

when artificial means are employed for warming them, the greatest caution must be observed. There is one good, old-fashioned way of warming baby that is best of all—snuggling it up closely against mother's body—and the way that nature intended it should be warmed.

Excessive use of sweets must be avoided by the nursing mother; for, as her health is, so will be the child's. Too much sweets will disturb the digestion and cause acidosis. A fat baby, with little power of resistance, will result. Death claims large numbers each year from this one cause.

Overfeeding or too frequent feeding will cause enervation in the child. Such children usually become dull and lacking in observation. They will develop slowly and will be much retarded in learning, because learning depends largely on the powers of observation and attention. They will be late in learning to talk and walk.

In children, too much starch and sugar consumption is intimately associated with tonsilitis, enlarged tonsils, adenoids, gastritis, pharyngitis, constipation, polyurea and nervousness. In adults we find from the same cause, rheumatism, glycosuria, diabetes, flatulency, headache, eczema, palpitation of the heart, constipation, colitis, piles and prolapsus of the rectum.

As Tilden says: "It is hard to define exactly, or clearly to draw the line between cause and effect, when a mixed diet is being used; but it is safe to say that there will be no putrid or septic poisoning from food decomposition unless animal albuminoid is mixed in the dietary."

THE FIRST YEAR

Normal children should learn to talk, likewise walk, at from nine to twelve months of age. Active, attentive children that have not been made sluggards through overfeeding, will walk at nine months. Those that are food poisoned will become lazy and inactive, and backward in all branches of learning; in fact, a crowded nutrition may develop in the child a mental incompetency that will prove a lifelong handicap.

In the absence of unavoidable barriers, children should nurse for the first year of their age. Pregnancy of the mother constitutes one of the

barriers, in which case the child should be weaned promptly. It should be nursed only in the daytime. It should sleep at night, and will, provided a restless night habit is not induced early in life, by allowing it to nurse at night. Regular habits of sleeping, both day and night, must be taught if perfect health is to be expected. This is as important as its habits of eating, bathing and exercise.

The young child should be offered water frequently during the day, especially in summer weather. Too frequent nursing by the breast or bottle will sometimes make the child sick. If the child is restless during the night, water from a nursing bottle should be given it, but there must be no sugar put into the water at any time. Water may be given the child from a cup, but milk should never be fed in this way, and it is preferable to give water out of a bottle, especially during the first year.

It is advisable that after weaning, the child be fed milk from a bottle until the end of the second year. In this way the motion of the mouth and tongue excites mouth and stomach secretions and the digestion will be more nearly perfect. Milk is the ideal food for the developing child up to two years. After that it should not be bottle fed. When it is found necessary to wean the baby, give a little pure goats' milk after each nursing. If goats' milk is not obtainable, cows' milk may be substituted. Artificial foods for children should be avoided. They will starve the body and eventually cause scurvy and rickets. After they are old enough to eat staple foods, plenty of fresh fruits and vegetables should be included in the menu.

Goats' milk is one of the purest of foods and is always to be preferred to cows' milk, since goats are noted as the most cleanly and careful feeding animals in existence. The milk should be fed fresh from the goat or cow, if possible. This is especially true in hot weather. In cold weather, however, the morning's milk will retain a sufficient degree of purity to give throughout that day. It should always be kept in scrupulously clean vessels and should not be placed in a receptacle containing other articles of food in unsealed vessels.

Milk should be kept at a temperature of as near 50 degrees, F., as possible. When ready for feeding, it should be warmed to approximately

body heat of the child. If a child is ailing no sugar should be added to the milk. When well, about six grains of sugar may be added to each ounce. A grain of baking soda to each ounce of milk will counteract, to some extent, its tendency to ferment.

Sanitation in the care and feeding of children cannot be too strongly urged. The milk bottles must be boiled and thoroughly cleansed immediately after using. They should then be placed in the sun for a few hours. The rubber nipples must be carefully washed and scrubbed with pure soap and water as soon as used. After cleansing the nipples should be placed in a solution of one tablespoonful of baking soda to a quart of water, and allowed to remain there until again wanted for use, when they should be rinsed in hot water. Remember that the avoidance of overfeeding, as well as cleanliness in the child's food and manner of serving it, is of the most vital importance.

There is no other milk that can quite equal mother's milk, but goats' milk is the best substitute, and when a child cannot be nursed, it should be fed goats' milk. This can be given without modification, in most cases, and the child's digestion will soon be educated to the change. If goats' milk is not obtainable then pure cow's milk may be used. This, however, may require modification, meaning to change the composition of it to more nearly resemble the mother's milk.

Rule for modifying cows' milk: One ounce milk sugar; one ounce lime water; from one to ten ounces milk; from seventeen to nine ounces water (that has been boiled). There are nine separate combinations provided here, and for each additional ounce of milk above two that is used, an ounce less of water is used. For example, if three ounces of milk are used, then use one ounce less of water, or sixteen ounces; the completed mixture in each case to equal a total of twenty-one ounces.

Whole milk should be used for babies. If the milk is too thin a little cream may be added, enough to make it of average consistency. Not too much cream should be added, however, as cream is not a perfect food for babies and its addition does not improve the digestibility of the milk.

The feeding of the modified milk should be about as follows: Begin first formula (containing two ounces milk) on second day; second formula

(containing three ounces milk) on fifth day; third formula on ninth or tenth day; after this increase the strength of the formula more slowly. As a general rule cow's milk diluted one-third may be used up to the end of the second month; third and fourth months, dilute one-fourth and at the end of this time it may be fed full strength.

The amount of milk given must necessarily be varied according to the requirements of the baby. In general this amount will be about as follows: To the end of first month, three to six ounces; second and third months, six to twelve ounces; fourth to eighth months, twelve to twenty ounces; and thereon to the end of the twelfth month, twenty to thirty ounces. Authorities differ as to how often a baby should be fed. Many claim they should be fed every two hours to the end of the second month; every three hours until the end of the ninth month, and after that every four hours. This is wrong. Children should be fed morning, noon and night only, and not at all during the night.

The accepted standard of weight for women is one and one-half to two pounds to each inch of height. Women who, during pregnancy, keep their weight from exceeding normal by more than five to eight pounds, will bear children with normal appetites, and with weights at birth averaging around five or six pounds. These children will be more active and will learn to talk and walk earlier than the average children. They will also be much less liable to the usual so-called "children's diseases."

Properly fed children will never be sick. It is the overfeeding and consequent disruption of their digestive and eliminative functions, or else the fact that their food has not been properly looked after, that causes most children's ills. Even the so-called contagious diseases will not develop in children that are properly cared for and correctly nourished.

Restlessness, kicking and crying are necessary aids to development in a baby. Activity is what stimulates mental and physical development and keen powers of observation in a child. A child that is fed and pampered in such a way as to keep it fully satisfied and inactive will not develop properly, either mentally or physically. If all of a child's wants are supplied without effort on its part, there naturally is no incentive to

effort; and nothing that is worth having is ever obtained without effort. The effort to secure food must build the power to digest it.

Babies should not be disturbed in their sleep for the purpose of feeding. They should be fed from birth, three times a day, but do not attempt to appease or quiet them every time they cry by feeding. The crying is good for them. The fighting they do with arms and legs while they are crying is healthful exercise. While they are fighting and crying they will be developing muscular and mental energy. Let them early in life know the feeling of hunger and learn to satisfy it at regular intervals.

THE SECOND YEAR

When children are old enough to be given staple foods they should be fed sweet fruits, such as dates, figs, raisins, etc., instead of too much starchy food and sugar. Starch foods should never be fed at all until after the second year. Toasted whole wheat bread is a good food for the child after the second year. However, it must be well chewed and must never be washed down with liquids, neither must it be softened. Thoroughly cooked whole grain cereals may also be fed, but without sugar. Uncooked dates, figs and raisins, soaked in hot water, then mashed and mixed with milk, will supply all of the sweets needed.

After the second year it will be well to give one meal a day of the sweet fruits and milk. Prior to the end of the second year one ounce of the sweet fruits mentioned should be fed at one of the daily meals. The fruits should be finely grated and mixed with an ounce of milk. Follow this with the desired quantity of milk. The other two meals during this period should consist of milk.

When the prospective mother overeats, the baby will be born with a curse of sensuality—a nervous system that craves stimulation. This child should be taught early in life to overcome its inherited tendencies. A baby of this class will cry much for food; and feeding will not seem to satisfy its craving. Extreme care should be exercised in such case to see that the child is not overfed, otherwise it will acquire gluttonous habits. Prospective mothers must practice self-control and moderate eating habits.

Great care must be exercised by the mother in not over-indulging the child. It is oftentimes a problem to know just what the baby requires

when it is restless and fretful. However, if the bowels and kidneys are apparently normal and there is no fever, it is pretty safe to assume that the baby is in no danger and there is no occasion for worry. To cater to its every whim and to feed it every time it cries is merely to lay the foundation for a spoiled child.

If a child is overfed, it acquires a constant desire for food, which cannot be easily satisfied. Trying to satisfy this abnormal desire for food is the cause of many children's deaths each year. Overfeeding causes fermentation and bowel distension from the resulting gas. In this condition violent crying may produce rupture. When this gas condition is present from overeating the child should be fasted for a time sufficient to remove the gas from its bowels and eliminate the undigested milk (shown by white milk curds) and to overcome the diarrhea if it is present. If constipation is present the bowels should be washed out by salt water enemas each day until the condition is relieved.

During the first half of the second year the child should be fed goat's milk, or cow's milk if the former is not obtainable. Presuming that the child acquired a normal habit of nursing, namely, three times a day from birth, there will be no danger of it taking too much milk at this age. Also give sweet fruits for the noon meal, in addition to the milk, as stated elsewhere. Vegetables, spinach and berries or any non-acid fruit may also be given, without sugar. These should be reduced to a pulp by grinding in a vegetable mill and passed through a sieve.

During the latter half of the second year, a heaping teaspoonful each of toasted bread and pecans or English walnuts, can be added to a salad composed of lettuce, cucumber, tomato and a small bit of onion. This is to be given at noon, followed with milk. The morning and evening meals are to consist of milk only. And remember, the child is to be fed but three times a day from birth. During hot weather the fruits may be given for the noon meal, without any milk.

If there is a suspicion that the child is enervated from any cause, the amount of food should immediately be cut down. If the child is known to be really sick all food should be withheld, except a little fruit juice, provided the child evinces a liking for it. If it cannot be taken with a relish,

however, it should not be given. Do not forget that in nearly every case it is the quantity of food a child is fed, and not the quality, that causes digestive derangement.

A serious mistake that is often made is that of changing the child's food when it is sick. A fast is more often required than any kind of food. Ignorance of this fact is costing the lives of many children. No food whatever should be given until the indications of derangement in the stomach and bowels have been eliminated. Then begin with the food to which the child has been accustomed, but reduce the quantity to from one-eighth to one-fourth the normal quantity, to begin with. When the quantity of food is increased close observation must be made and if any trace of the trouble reappears, omit one or two feedings and then begin with a reduced quantity again.

THE THIRD YEAR

Children at three years of age do not masticate well. Therefore, have the cereals for the morning meal well cooked. Add but a little salt and no sugar. Use milk that is one-half cream. At noon any kind of fruit may be given and a small helping of cottage cheese, or a soft-boiled egg. If the child likes apples, give it all it wants with the fruit meal during the winter period. Or a baked apple instead of raw, if preferred. Raisins, figs or dates are the best winter fruits; in the summer, any kind of berries or other fresh fruit for the fruit meal. For the evening meal, whole wheat bread, well toasted; or well cooked oatmeal, corn meal or rice, with rich milk and no sugar, may be used.

When the child is old enough to masticate properly it should be fed a poached, soft-boiled or scrambled egg, together with a liberal sized combination salad. Or, ground nuts may be added to the salad, instead of the egg. A couple of times each week add baked potato to the salad. The salad may be made of tomatoes, cucumbers and lettuce, equal parts, with a small piece of onion. Dress this with olive oil and salt. Cottage cheese may be taken with the salad meal if desired. Well toasted, whole wheat bread may be eaten with the salad. If the child prefers fruit, let it have all the fresh, uncooked fruit it wants, to which may be added figs, raisins and dates during cold weather.

FIVE YEARS UP

The school child's energy must be conserved. It must have regular hours for sleep, going to bed early, and getting up at a certain hour. A pupil sometimes becomes irritable and nervous, and evinces no liking for the food offered, but is willing to eat other food. This child should be kept at home and put to bed and given no food except well toasted bread and butter and a glass of milk, morning, noon and night. This plan should be followed for several days, giving water frequently during the day.

Children must early be taught the significance of natural laws and the importance of obeying them. They must know that this is necessary if they are to attain full mental and physical health and strength. They must be taught the utter necessity for proper eating and how food taken in the correct amounts and proportions will build body and mind; how wrong eating surely paves the way to disease, unhappiness and early death.

They must also be taught what sensuality is and how it handicaps its victim, both in body and mind. Sensuality destroys morality, conscience and ambition, and is very usually the cause of all of man's failures. Sensuality is the cause of lack of ambition. Idleness prevents deep breathing and induces poor circulation of the blood on account of the inactivity. The secretions and excretions are retained and they become poisoned from their own waste products. Mental and physical activity would enable one to throw off these impurities.

School children must study hard, get plenty of exercise and eat moderately. Otherwise they will not succeed in life because the brain will be dull and stupid. The pupil that eats heavy breakfasts of meat, potatoes, white bread and coffee will not progress satisfactorily. Breakfast for school children should consist of corn meal or oatmeal mush and rich milk; or whole wheat bread, well toasted, followed by milk. Two or three times a week this may be varied with biscuits, butter and honey, followed by milk. There must be no sugar used with the breakfast foods and no eating between meals.

For lunch, eat all the fruit desired. For a change, pie and milk or plain cake and milk, may be taken once or twice a week. Dinner may

consist of fish, meat, chicken, nuts or cheese, with non-starchy vegetables and salad or slaw, every other day. On the alternate days, potatoes, navy beans or butter beans with the non-starchy vegetables, including salad or slaw. In place of the above dinner menu, whole wheat bread, butter and milk may be substituted occasionally, if desired. The student at school should at all times eat moderately, for too heavy eating is responsible for many failures in school work, which too often are the stepping stones for failures all through life.

Rest and sleep are two of the important considerations in the welfare of the growing child. For three or four weeks after birth, a child will normally sleep the greater portion of the time. After they are older they should go to bed at nine o'clock in the summer and at eight o'clock in the winter. They should also be allowed a nap of one hour's duration every noon. Mental and physiological rest will alleviate a great percentage of children's nervous disorders.

Restlessness in children is not an indication that they are in need of drugs or medicines. What they probably need is to have the quantity of food cut down, or wholly withheld, until the condition has been overcome. Or, their condition may be partially due to insufficient sleep, in which case the surroundings must be made quiet enough to induce sleep. There is no remedy in the world so good for the child or the adult as correct eating and a sufficient amount of sleep.

Some children inherit tendencies toward certain diseases. The most sensible precaution in such cases is to see that they are fed properly and regularly and receive the proper amount of sleep. They must be put to bed early and should have a nap of an hour at noon. Precautions must be taken against their developing an abnormal emotional nature. Their trend of eating and thinking must be carefully watched after. Sexual precocity is developed through over-stimulation. This leads to bad physical and mental habits and various derangements. Therefore, watch carefully after their eating habits.

Plain foods, including plenty of fruits and vegetables and goats' milk should be the rule with growing children. Custards, candies, pies, puddings and all stimulating drinks, such as coffee and tea, must be used

sparingly, if at all. Children in which there is an inherited handicap are especially prone to form bad habits. In these the habits of eating must be most carefully regulated. In children with inherited tuberculous tendencies, wrong eating will early develop enlarged tonsils, adenoids, cervical glands, etc.

When there is constipation and gas distension of the bowels in children, it is important that the bowels be made to move as soon as possible. For this purpose an enema is most advisable. In a quart of warm water dissolve a heaping teaspoonful of table salt. Place in a fountain syringe and hang the fountain about three feet above the child's body. Do not hang higher than this, as it would then give too much force to the flow of the water. If one enema does not clear out the bowels properly, use additional ones until the desired result is accomplished. If the child is suffering much pain a warm bath should be given. Begin with moderately warm water, then add hot water until the temperature has risen to the required degree, not to exceed 90 degrees, however.

The Truth Concerning Teeth

WE HEAR much talk nowadays about bad teeth and the fact that medical science has lately discovered them to be the cause of a long list of diseases—embracing almost everything included in the category of human ills. We hear doctors and dentists freely advocating extraction of the teeth as a means of successfully curing these diseases. And it is no uncommon thing to see persons in the prime of life—even youthful persons—who have sacrificed every one of their natural teeth to this silly doctrine.

And all this in spite of scores of eminent authorities who advance the indisputable proof that defective teeth are merely symptoms of malnutrition. That instead of being causes of disease they are evidences of something radically wrong in the amount, combination or proportion of foods taken; and that normally nourished persons invariably possess perfect teeth.

Defective teeth are just as plainly an evidence of wrongly proportioned chemical elements taken into the body through the medium of food as is acid stomach, for instance. Each is the effect of a certain definite cause and it is just as ridiculous to ignore the cause and treat only the symptom and expect permanent results in the one case as in the other.

Sound teeth constitute one of the priceless possessions of humankind. They form the basis for health. The first four permanent teeth in childhood, known as the six-year molars, may be said to be the foundation on which is erected the structure of future health or misery. Teeth were supplied us to fulfill a certain important mission in life. They were intended to remain there, otherwise nature would not have given them to us. And they would remain with us were it not for wrong habits of eating.

As Dr. R. T. Trall has said: "If the teeth are properly treated, they would never decay. There is no more reason, except abuse, why the teeth should ulcerate or become loose, than there is for the fingers or toes, or the ears or nose, to rot and fall off. The teeth are the densest, firmest of all organic structures, and should be the very last, instead of the first, to decay."

Is it not plain, therefore, that there is some serious error in the habits of the people which brings these conditions about? And the cause is obvious enough. It may be summed up in two words, "wrong eating." Humankind has departed so far from its natural modes of living that health and happiness are replaced by disease, suffering and death.

It is not to be denied that poisons from defective teeth often spread throughout the system and aggravate existing cases of disease in various organs of the body, such as rheumatism, heart trouble, kidney, liver, stomach and bowel troubles and many others. This is not infrequently the case where there are hidden abscesses at the roots of the teeth, which cause no pain in the teeth themselves, and the victim receives no direct warning from the teeth of their poisoned condition, as by toothache.

I do not contend there are no cases where extraction is necessary. As for instance, where a hidden abscess (irritation at the roots) has caused destruction of a portion of the tooth at a point that will not permit of filling or crowning the only sensible thing to do is to extract the tooth. However, barring actual decay of the roots, the existence of an abscessed or irritated condition is entirely susceptible of complete absorption and healing up by supplying to the body the proportions and combinations of chemical elements it requires for the purpose, through the medium of food.

After the abscess has been cleared up by this method the supply of poison to other parts of the body will be stopped, with consequent alleviation of the abnormal condition which existed in those parts. If, on the other hand, the incorrect habits of eating that caused irritation of the teeth to develop are persisted in—even though the teeth are extracted—the poison in the system will remain and will continue to form and demonstrate its presence in one way or another. This fact will be apparent when you consider that the system was originally not tooth-poisoned, but food-poisoned, and that by removing the teeth you did not remove the cause.

There is ample proof at hand from unquestioned authorities, that by proper selection of food consumed before and during the entire dentition period, it is entirely possible to develop sound teeth. And just as surely will deficiency foods during this period produce defective teeth. Equally

convincing proof is to be had that unsound teeth constitute but one of the many symptoms of the serious systemic disturbances that are caused by refined foods.

In this connection it will be interesting to the reader to note that half the children in a school in Leeds were found by Dr. Hull to be suffering from mineral starvation, due to refined food. The British Dental Association found, out of 10,500 school children examined, 86 per cent were suffering from defective teeth, resulting from a diet that was deficient in the mineral substances that build and repair bones, teeth and tissue.

Dr. A. Freedman Foot found, out of 1,694 children examined in 1913, eleven possessed normal teeth. In a report, Dr. Foot declared: "The six-year molars of nearly every child were broken down wholly or in part. In many instances the molars were decayed through the gums. So extensive and far advanced were the defects that corrective treatment, even if it were applied, would have been of little value." The New York Department of Health through Dr. T. Van Wincke, examining the teeth of 231,081 school children of New York city, outside the dental clinics, found 131,747 defective.

Dr. Louis Goldstein, New York city, says: "After examining the teeth of not less than 400 school children in my home neighborhood here in the Bronx, I have yet to see a perfect set of six-year molars (first four permanent teeth to appear in childhood). These teeth in nearly every instance were entirely decayed. I have never observed a perfect set of teeth in any American child and have but one adult patient showing extremely good teeth. She is a young woman."

Dr. Burtice E. Lawton, New York City, declares: "Our faulty teeth are undoubtedly the result of an impoverished diet. We see many defective teeth among those in the best walks of life. Heredity does not seem to gratly increase the condition, for at present I have a patient undergoing treatment—a girl—who is the child of strong, robust parents.

"For the past three years I have observed her teeth on an average of once a month. Her teeth have virtually been starved and are suffering from the absence of a sufficient quantity of lime salts. Had she been fed on

good, old-fashioned whole grain breads and breakfast foods when a youngster she would not be compelled to come under my care now."

Dr. E. A. Crostic, New York City, declares: "No one in New York City is eating the proper food these days. Foreigners who come here with a history of natural foods behind them possess solid tissues.

"Thirty years ago when the occasion arose people could sit in a dentist's chair and have several teeth extracted without wincing. Today, so lacking in nerves, energy and vitality are our women, that almost any of them after the ordeal of one or two extractions is on the verge of collapse."

Dr. Robert W. Taggart, New York City, declares: "The six-year molars are decayed and in many cases completely gone by the time the child attains the age of seven or eight years. It is almost impossible to save these teeth in any instance.

"German parents, who grew up on the whole wheat and rye bread of their native land, prior to the introduction of refined bread, have better teeth than their children."

Dr. Samuel C. Newman, New York City, declares: "You cannot beat the Italians for good teeth. They rarely have more than one or two teeth missing, the others being perfect and as hard as rocks.

"To drill into their hard tooth substance means to dull burr after burr in the attempt.

"Among the city children of my locality I find soft and sensitive teeth. The six-year molars are usually gone and in some instances I have observed that they do not last longer than six months after their eruption."

Dr. Anton J. Haecker, New York City, declares: "Twenty-five years ago I had the opportunity of examining the teeth of the school children of Worms, Germany; 250 families, existing entirely on whole grain and vegetable foods, were living within a school district at that time.

"I could pick out the children of these families from among the others readily for the reason that their cheeks were rosy and they were the picture of health. The fine condition of their teeth as compared with the others was little short of amazing.

“Their diet consisted exclusively of whole grain bread, vegetables and fruit. The inhabitants of the famous Black Forest district of Germany and the lumbermen of the Vogelsburg mountains have wonderful teeth and are in rugged health.

“On Sunday quite often one pound of meat must suffice for the appetite of eight people, the main foods being black bread, potatoes and rye flour soups.”

Dr. W. E. Andrews, New York City, declares: “The teeth of Slavs, Bulgars, Russians and Poles are ordinarily perfect. I have lately seen the grinders of an old Slav, sixty-one years of age, who works in a nearby coal yard. Not a tooth was missing. His childhood diet of black bread and fish had given him an indestructible tooth structure.”

Dr. C. R. Kelly, New York City, declares: “Periods of disease in children marked for general nutritional disturbances in which tooth nourishment is for a time completely shut off, leave their traces like sign-posts on developing teeth.”

Dr. Charles A. DuBois, New York City, declares: “The elimination of starch and sugary foods, including candies and syrups, from the diet is essential to treatment of pyorrhea. There is no such thing as local tooth disease. The condition that leads to decay is always systemic.”

Dr. F. A. Sterling, New York City, declares: “Natives of Africa whom I have examined, have possessed teeth in perfect condition, due entirely to their living on coarse, natural foods. I have observed that the nearer people are to primitive nature, the better are their teeth. Savages all have good teeth. The colored race, particularly those living on whole cornmeal and the unrefined sugar cane diet of the southern plantations, have good teeth.

“In one generation, in advancing from the southern cornfields and cane brakes, the teeth of our colored children become very poor.”

Recipes

DRY BEANS AND PEAS

These two foods are injured by the practice of discarding the water in which they were soaked overnight and then cooking in fresh water. In soaking, the soda is thrown off with the water and the alkaline potentiality of the food destroyed. These two starchy foods should be soaked overnight and cooked in the water in which they were soaked. No seasoning should be added until served, then butter and salt may be added to taste.

COOKING MEATS

Meats should never be fried. Pot roasting is well suited for small families. Put the roast to cook in a small amount of cold water, after having seared it well on all sides. Allow it to come to the boiling point very slowly; then turn the gas down to the simmering point. Just enough water should be used so that, when the meat is tender, it will all be evaporated. If by mistake, too much water has been used, the fluid may be used for soup, or to dress the cooked vegetables in place of butter or cream.

STEAKS AND CHOPS

These should be broiled. Sear the meat well on both sides very quickly, then finish the cooking with enough heat to cook the inside of the meat without hardening the albumin. In broiling, the object is to sacrifice the outside of the meat—harden the albumin of the surface of the meat—but keep the inside soft and juicy.

FISH

Fish should be washed and dried; then laid on a greased paper in a baking pan. Bake until tender, and dress with salt, lemon juice, and butter if the fish is not fat.

JACKET ROASTING

Roasting in a jacket is a good way to prevent the meat from drying out. Make a batter of flour and water. The batter should be stiff enough to coat the meat well. After giving the prospective roast a thorough coating, wrap paper with another layer of the batter. Roast the regulation time, adding a little extra on account of the jacket. When done, the jacket may be split down the middle and the meat lifted out.

Any meat may be cooked in this way: veal, beef, mutton, fowl, or pork. Pork is especially fine when thus cooked.

ROUND STEAK

Round steak—the cheapest of steaks—cooked as follows is quite palatable: Put into a very hot frying pan and sear thoroughly; then allow it to stew by adding a small amount of cold water. The cooking, until the meat is tender, should be by a simmering heat rather than by hard boiling. When tender, take up on a hot plate, cover and place in a warming oven.

VEGETABLES

Vegetables should be prepared and put to cook in just enough water to prevent burning. When properly cooked, the water should be practically all boiled away. What water remains should be a rich juice and should be served with the vegetables. Positively no seasoning is to be added to any food until served; then each person should season to suit himself, with salt, and butter or cream. Do not use flour or starch dressings, or so-called cream dressings. The cooking vessel should have a tight-fitting cover. A double boiler may often be used to advantage; it minimizes the danger of burning. Steam cooking is an ideal way, and the fireless cooking is said to give satisfaction. When the double boiler is used, little, if any, water is needed. The more nearly vegetables are cooked in their own juice, the better. Any two vegetables may be cooked together, but vegetables should not be cooked with meat.

COMBINATION SALAD

Lettuce, tomatoes, cucumbers, a small bit of onion. Dress with salt, olive oil, and lemon juice.

Lettuce, celery, canned tomatoes, or fruit, such as apples and grapes. Dressing the same as above.

VEGETABLE SOUP

Turnip, carrot, spinach, celery, cabbage, onion, green corn, peas, beans, potato. Run any five of the above vegetables through a vegetable mill, and cook in enough water to keep from burning. When thoroughly cooked add enough milk to make the desired amount of soup. Add salt and butter after serving. Any left-over vegetables may be used in preparing this soup. Oyster plant, left-over, stewed or baked beans, or cold potatoes may be used. If it is to be served with a meat meal, a little meat broth may be added.

CREAM OF TOMATO SOUP

1 pint tomatoes, strained; 1 cup milk; 1 cup cream.

Put tomatoes in double boiler and, when near boiling point, add one-half teaspoon of soda. Add milk and cream (hot) to tomatoes, and season with salt and pepper; or drop cream and add one cup of broth.

GLUTEN BREAD

3 cupfuls of Gluten Flour	1 $\frac{1}{4}$ Cupfuls of Water
$\frac{1}{2}$ Teaspoonful of Salt	1 Cake of Compressed Yeast
1 Yolk of Egg	1 Tablespoonful of Melted Butter

CEREALS

In cooking oatmeal, or any of the breakfast cereals, use about one part of the cereal to five parts of water. Cook until the mixture has reached the consistency of mush. Then dress with salt and butter, or salt and cream—no sugar.

MACARONI

Macaroni should be kept boiling constantly in a large amount of water. When tender, drain off water and, after placing in colander, allow cold water to run through it. Just before serving, add salt and butter or a little cream; no cheese or tomato dressing.

CLABBER BUTTERMILK

Pour fresh, clean milk into a deep dish, and allow to stand until clabbered as thick as baked custard. Then chill, and beat with an egg-beater thoroughly, incorporating as much air as possible.

COLD SLAW

After cabbage has been thoroughly cooled in cold water, cut fine. Dress with lemon juice, cream, either sweet or sour, and a very little salt.

BAKED PORK AND BEANS

The beans should be put to soak the night before they are to be cooked. When they are put to cook the next morning, the same water in which they were soaked should be used. Add enough additional water to just come to the top of the beans. Cook until all water has been cooked away, then place in a baking pan with a very small amount of water. Add more, in small amounts, as required.

After they are thoroughly cooked, the oven fire should be turned very low. Put a couple of strips of bacon, cut into small pieces, to stew in a small amount of water. When tender, pour the pieces, together with the juice, over the beans—about twenty minutes before serving time—and allow to stand until taken up.

BISCUITS

- | | |
|----------------------------------|------------------------------------|
| 1 Quart Flour | 2 Tablespoons Melted Butter |
| Salt sufficient | Milk sufficient to make soft dough |
| 1 Heaping Teaspoon Baking Powder | |

Rub the baking powder, salt, butter, and flour together. Add milk, and manipulate rapidly into a soft dough. Biscuit dough should be teased, rather than rolled, into a sheet about one-half inch thick. Cut into strips one and one-half inches wide. Place in baking pan. Have oven at a baking temperature, and get dough into oven as quickly as possible.

CORNMEAL MUFFINS

$\frac{1}{2}$ Cup Cornmeal	1 Teaspoon Baking Powder
$\frac{1}{2}$ Cup White Flour	$\frac{1}{2}$ Cup Sweet Milk
1 Egg Well Beaten	1 Teaspoon Melted Butter

Mix flour and baking powder with salt. Add milk, beaten egg, and melted butter. This makes six.

MEAT, OR ITS PROTEIN EQUIVALENT

(For Dinner Use Only)

Lamb, fowl, fish, eggs, mutton, game, sweetbreads, calves' liver, sausage, oysters or other sea food, beef, veal, pork, milk, buttermilk, cheese, nuts, sardines or other canned fish, smoked or cured meats.

STARCHY FOODS CARRYING PROTEIN

(Substitutes for Meat)

Sweet potatoes, Irish potatoes, hominy, Hubbard squash, macaroni, spaghetti, baked beans, any dry beans or peas, rice, corn bread, whole-wheat bread, rye bread.

RECIPE FOR BRAN GEMS

Use two cups of table bran, one-half cup of white flour, one tablespoonful of lard, one cup of sour milk, one teaspoonful of saleratus and one teaspoonful of baking powder. Mix the saleratus in the sour milk and the baking powder in the white flour. Bake in greased tins in a hot oven.

Valuable Things to Know

VALUE OF SKIMMED MILK

In spite of the delicious taste of cream, it is not the most valuable part of the milk, as some apparently intelligent people appear to believe. The exact contrary is, in fact, the case. The part of the milk left after the cream has been removed contains practically all the protein, sugar, and mineral salts. In the ordinary mixed diet, moreover, a sufficient amount of fat is supplied by meat, butter, lard, etc., so that the loss of this ingredient from the milk is of relatively little importance. Protein, on the other hand, being the most costly of the food-elements, is the one most likely to be lacking in inexpensive meals, although generally used to excess by those who can afford it.

For those who have to figure cost closely, therefore, skimmed milk offers a very valuable source of the most expensive element of the dietary. It is the cheapest available source of animal protein at the present time. Whole milk is cheaper than either meat or eggs as a source of protein; but skimmed milk is even cheaper, costing, under normal market conditions, only half as much as meat; and skimmed milk cheese, if we could have it, would be cheaper still, and much better for some purposes than the whole milk product.

It is estimated that from six to eight cents worth of bread and skimmed milk will furnish nearly one-third of the daily food requirement of a man engaged in moderate muscular work.

WATERCRESS A SPLENDID MEDICINE

Watercress contains much iron, and this is real blood medicine. People who desire a good complexion should eat it abundantly, because it is a destroyer of pimples and a cleanser of the entire system. Watercress will also neutralize chalk in the blood, which matter is a great cause of aging and stiffening of the fibres.

BOIL POTATOES WITH JACKETS ON

When you boil potatoes, boil them with the jackets on. In this way you will not lose the valuable mineral matter that lies close under the skin. Be sure to remove the water from them as soon as they are done, and after draining the water off, let them stand uncovered so that the steam can escape. Mashed potatoes should not be smoothed down on top. Let the steam escape and the potatoes will be mealy.

EAT PLENTY OF FRESH VEGETABLES

Don't neglect, during all seasons of the year in which it is possible to secure them, that important class of foods, the green vegetables. From heavy feeding more or less waste material accumulates in the body and this must be eliminated. This is where the green vegetables and the salts they contain are so valuable. They furnish in large quantities, easily taken up by the system, the chemical substances necessary for carrying the waste out of the body. The tissue salts they contain are also necessary in rebuilding the body tissues. With each dinner you should include one or two cooked, non-starchy vegetables, and also a large dish of raw vegetables, of one kind, or better still, a salad made up of several of the raw vegetables, or raw fruits.

HOW TO OVERCOME STOMACH COUGHS

This is a condition in which there is an annoying and persistent cough, although no lung trouble is present. The sufferer will be found to have a resistance that is below normal and an impaired digestion. This trouble is caused from eating too much starchy food. More breakfast foods, bread, potatoes and other starchy foods are partaken of than can be digested properly. As a result, eructations of acid and gas from the stomach keep the throat irritated; hence the cough.

The remedy is simple enough. Discontinue all starchy foods for a week. For breakfast eat either cooked or raw fruits. In addition, milk or cheese, or both if desired, may be taken. For dinner, vegetable soup, with which may be included all of the cooked non-starchy vegetables

desired. For supper, meat and a raw vegetable salad, made up of one or more vegetables, and a glass of milk or water. After the stomach cough has disappeared, starchy foods should be restricted to one meal a day.

“PACKS” AS A HEALTH MEASURE

An excellent remedy for poor circulation, unsatisfactory sleep and for the removal of impurities from the blood, is what is known as the “Pack.” A three-quarter pack is given by spreading on the bed a warm woolen blanket, long enough to reach from the arm pits to the ankle. Over the woolen blanket a linen sheet is spread, reaching from the feet to a point five fingers below the arm pits.

The linen sheet is moistened thoroughly with cold water and wrung out as dry as possible. The patient lies, with the arms held over the head, on the wet sheet in which he is then wrapped. He is then wrapped in the woolen blanket, after which he puts his arms down and the whole body is covered with two more blankets. His position should be comfortable, with the upper part of the back and head elevated, as when sleeping. A cold compress must be placed on the forehead and changed whenever it gets warm.

In giving a pack the body becomes warm after a short time, and the heat and increased blood flow running from the congested inner organs into the blood vessels of the skin gives the same effect as the Nauheim bath. The only possible objection raised by some to these packs is that they must be taken with cold water, in order to insure quick reaction. Some persons who are not accustomed to cold water do not like them for this reason.

Packs open the pores and enable the skin to throw off into the wet sheets much waste. Uric acid and medicines, like iodine or mercury, if taken, can be found on the sheets of the pack removed from patients. The pack is given two to six times a week, for from three-quarters of an hour to two hours. The patient may sleep while in the pack. A longer period than one hour is not good for patients with heart trouble.

GUARD AGAINST ACIDOSIS

When a condition of health exists the fluids of the body are in a neutral state. If they vary from this state, from alkalinity on the one side or acidity on the other, the inclination will be toward alkalinity. So long as this state of neutrality exists, or when there is slight alkalinity, the nerves are non-irritable and quiet. Even quite pronounced alkalinity is to be desired, rather than the reverse condition—acidity—although it be ever so slight.

Most foods that we eat are potentially alkaline. When we eat apples we may think that they are acid because they are sour, but they are basic—alkaline. Cooking converts them into the acid state. For this reason it is always safer for us to eat our apples and other fruits—as well as vegetables—raw. Cured or cooked meat is acid, but in its raw state is alkaline. This is true because in the curing or cooking it loses its soda element.

The acid of fermentation that comes from the digestion of meat and fish will be counteracted by the basic element we get from eating lemons, oranges, salads, grapefruit, apples, vegetables, etc.

Nature supplies us our foods properly prepared for us. In this way she affords us aid in keeping our bodies in a neutral state. But, as Tilden says, “. . . . We get busy as quickly as we can and ruin everything brought into the house that looks like food. The vegetables are cooked in a flood of water, and then a flour dressing is added which unfits them for food; but we eat them just the same. Cook vegetables in as little water as possible. If they are cooked in a double boiler or a pressure cooker they will need but very little, if any, water. The alkalinity of vegetables, so necessary to head off the formation of acid which naturally results from meat digestion, is lost by the cooking of the vegetables in a lot of water and pouring it off.

“In the process of digestion meat generates sulphuric acid; that is the reason why the combination salads should be eaten with meat—they are decidedly alkaline. The vegetables out of which the salads are made are basic (alkaline). So, if our desire is to prevent our nice steak, or

chop, or chicken, or fish, or whatever animal food we are going to eat, from producing an acid fermentation, we must take something that will neutralize that tendency. When we go to the fish house to order a nice fresh mackerel or black bass, we should not eat bread or crackers with it, but instead we should eat a good, big combination salad. If we cannot get this, we take a goodly helping of chopped cabbage. This vegetable is usually supplied with fish orders.

“The chef who furnishes the cabbage with the oysters and fish builds, dietetically, better than he knows. There is in the cabbage alkali enough to prevent the formation of acids, or to neutralize the acid that naturally forms during the digestion of animal food.

“Those with full resistance—people in full health—can eat an ill-balanced diet and suffer from acid poisoning—digestion-end acidity—until their resistance is broken and enervation is established; then toxic diseases will develop in keeping with individual diatheses.

“The food drunkard will have many preliminary warnings. In childhood there will be diseases peculiar to this age. As childhood vanishes into puberty and maturity, the diseases peculiar to the varying ages occur and file on to senility. One and all rest on a basis of acidity.

“People hunt for health all over the world, not knowing that it goes out of their houses by way of the garbage bucket. They do not have the slightest idea that they build their diseases every day by wrong eating, and too often by the wrong preparation of food. People get up of a morning and start the day by eating a breakfast that builds disease. If the first meal ferments, the fermentation never lets up all day; for lunch and dinner add to the process. Many invalids are busy every day building disease in this way.”

Dr. Loughney's Goat Ranch

DR. LOUGHNEY has for the past several years been deeply interested in the subject of goats and their breeding. He has lately established a goat ranch on Puget Sound, near Seattle, Washington, where he makes a specialty of breeding and raising for sale the very finest imported strains of milch goats, as well as grade stock.

Among the pure bred types now to be seen at his ranch are the Saanen, Toggenburg and the Anglo-Nubian, three of the most noted milch producing strains of foreign origin, the two former having been developed in Switzerland, the latter being an English product.

Hoosier Boy (see photograph opposite page 144) is said by goat fanciers in this country to be one of the finest specimens of pure bred Saanen bucks in America. His parentage on both sides springs from the heavy milk-producing strain that is peculiarly well adapted to the climatic and feeding conditions of this country.

Puget Girl, illustrated opposite page 137 is a fine, matured milker, with a six and one-half quart record—a splendid specimen of Saanen doe. Perhaps no finer pair of goats has yet been produced in the United States than these.

Fully appreciating the growing importance of the milch goat industry in this country, as a health measure, as well as from a remunerative standpoint, Dr. Loughney invites correspondence from all who are interested in this worthy line of endeavor. Lists of matured does and bucks, and kids of both sex, that are for sale by him will be issued from time to time. These will be mailed free on request.

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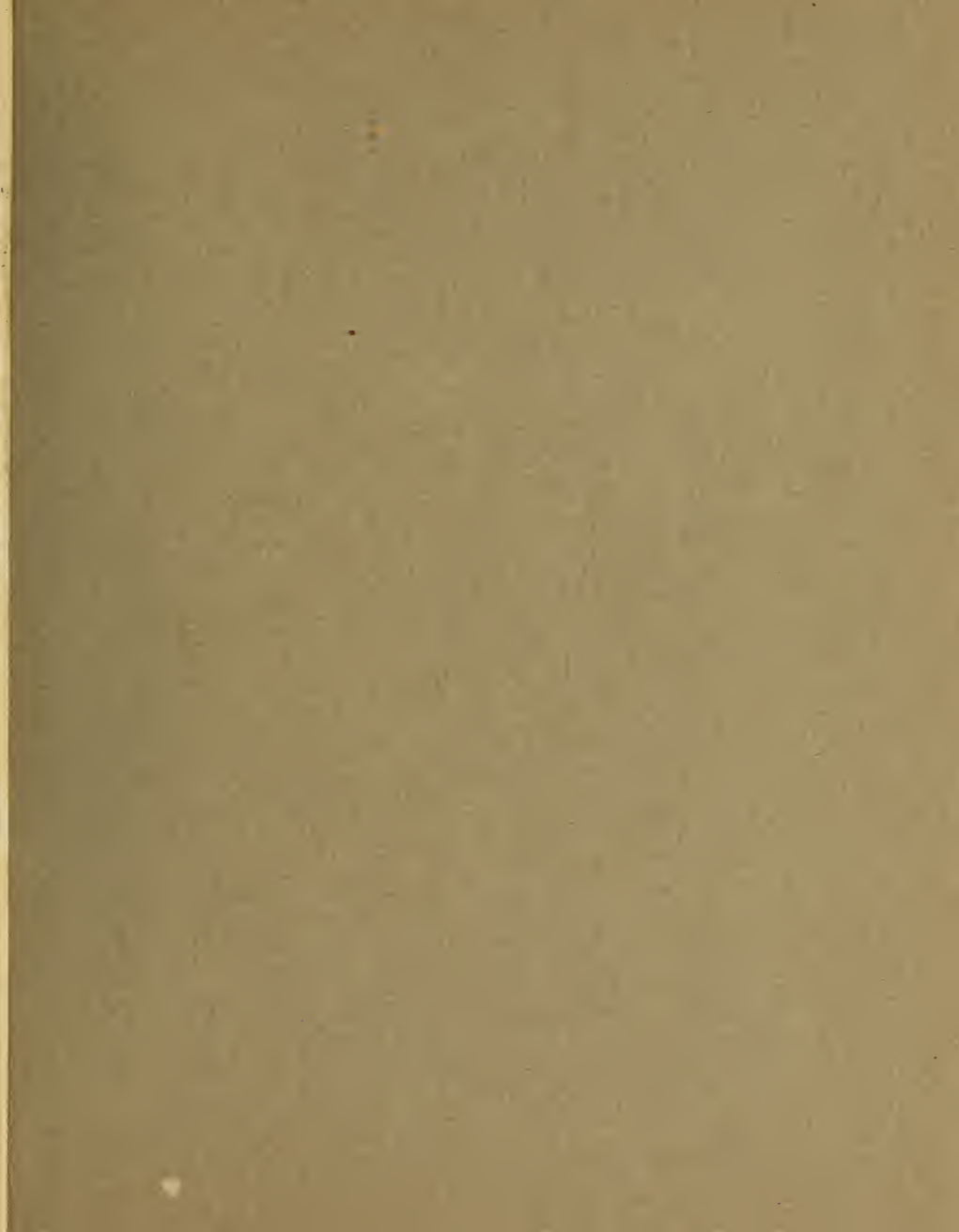
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